CFD-600

SERVICE MANUAL

US Model

CD Section	Model Name Using Similar Mechanism	New
	Optical Pick-up Block Name	KSM-2102BAN
Tape Section	Model Name Using Similar Mechanism	New
	Tape Transport Mechanism Type	MF-600-64G

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 4-ohm loads, both channels driven from 150-15,000 Hz; rated 2 W per channel-minimum RMS power, with no more than 10 % total harmonic distortion in AC operation.

Other Specifications

CD player section

System	Compact disc digital audio system
Laser diode properties	Material: GaAlAs Wave length: 780 nm Emission duration: Continuous Laser output: Less than 44.6 µW (This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block.)
Spindle speed	200 r/min (rpm) to 500 r/min (rpm) (CLV)
Error correction	Sony Refined Super Strategy Cross Interleave Reed Solomon Code
Number of channels	2
Frequency response	20–20,000 Hz +1/–2 dB
Wow and flutter	Below measurable limit

Radio section

Frequency range	FM: 87.6–108 MHz AM: 530–1,710 kHz
Antennas	FM: Telescopic antenna AM: Built-in ferrite bar antenna

Cassette-corder section

Recording system	4-track 2-channel stereo
Frequency response	TYPE I (normal) cassette: 80–10,000 Hz

General

Speaker	Woofer: 10 cm (4 inches) dia., 4 ohms cone type × 2 Tweeter: 2 cm (⅞ inches) × 2
Inputs	Mixing microphone input jack (minijack): Sensitivity 2.45 mV For low impedance microphone

—Continued on next page—

使用時は添付資料も参照のこと
Refer to the additional documents

CD RADIO CASSETTE-CORDER

SONY®

Outputs	PHONES jack (stereo minijack) For 8–32 ohms impedance headphones Speaker terminals: CFD-600: for supplied 4 ohms impedance speaker CFD-610: for supplied 3.2 ohms impedance speaker
Power output (excluding USA model)	CFD-600: 3 W + 3 W (at 4 ohms, 10% harmonic in DC operation) CFD-610: 4.5 W + 4.5 W (at 3.2 ohms, 10% harmonic in DC operation)
Power requirements	240 V AC, 50 Hz (Australian model) 120 V AC, 60 Hz (Other models) DC 12 V, 8 size D (R20) batteries
Power consumption	CFD-600: AC 25 W CFD-610: AC 28 W
Battery life	For CD radio cassette-corder:

	FM recording	Tape playback	CD playback
Sony SUM-1 (NS)	approx. 11 h	approx. 7 h	approx. 3 h
Sony Alkaline AM1	approx. 16 h	approx. 11 h	approx. 5 h

	For remote commander: approx. 6 months
Dimensions	Approx. 652 × 250 × 291 mm (w/h/d) (25¾ × 9⅞ × 11½ in.) incl. projecting parts
Mass	Approx. 10 kg (22 lb 1 oz) (incl. batteries)
Supplied accessories	AC power cord (1) Remote commander (1)

Design and specifications subject to change without notice.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the changed electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25cm away from the objective lens.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

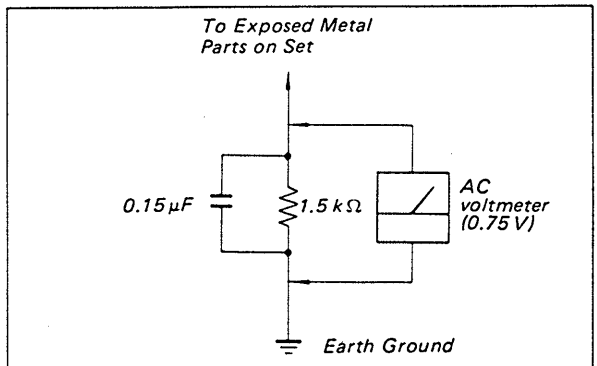

Fig. A. Using an AC voltmeter to check AC leakage.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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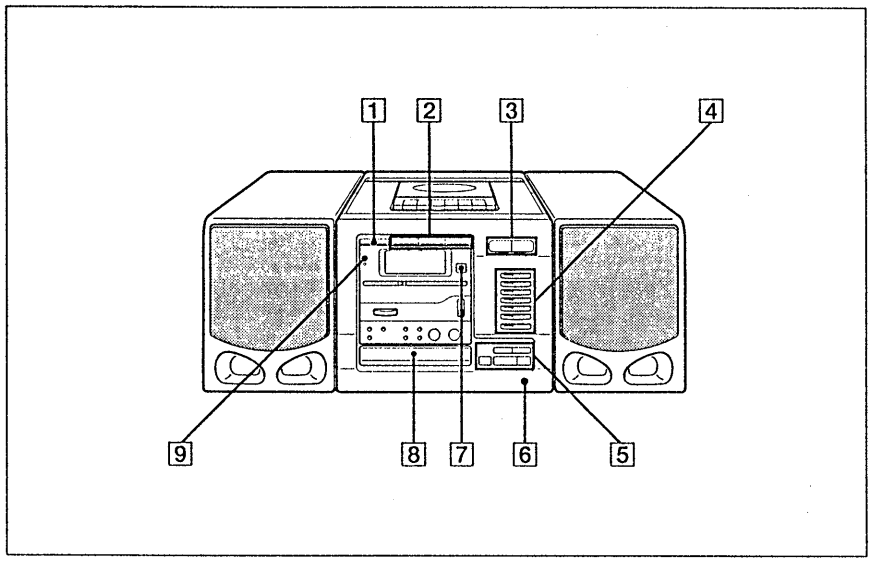
Looking at the Controls

See pages in ( ) for more details.

CD Player



1 POWER switch

2 FUNCTION buttons
TAPE: for playing a tape
RADIO: for playing or recording a radio program
CD: for playing or recording a CD

3 VOLUME buttons

4 DISC SELECTION 1–6 buttons and indicators
SINGLE OPERATION button and indicator

5 CD operation buttons
⏮/⏭ (AMS*/search)
⏏ OPEN/CLOSE
⏯ (play/pause)
■ (stop)

6 PHONES (headphones) jack (stereo mini-jack)

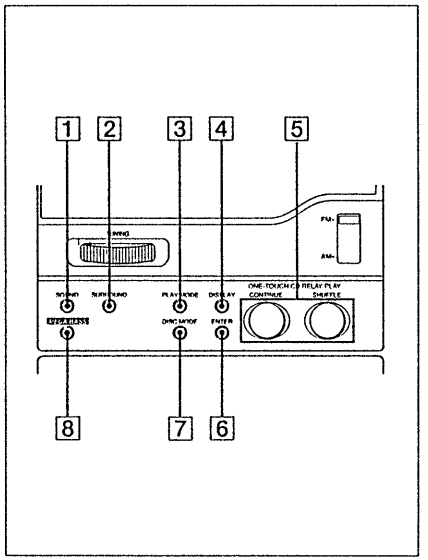
7 Remote sensor

8 Disc tray

9 OPR/BATT (operation/battery) indicator

*AMS Automatic Music Sensor

Close-up of Front Control Panel



1 SOUND button *(9)*

2 SURROUND button (CFD-610 only) *(12)*

3 PLAY MODE button *(16, 17, 18, 19)*

4 DISPLAY button *(20)*

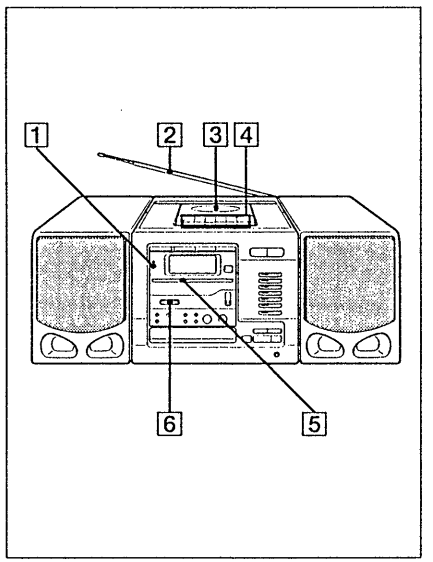
5 ONE-TOUCH CD RELAY PLAY buttons *(18)*
CONTINUE button
SHUFFLE button

6 ENTER button *(16, 17)*

7 DISC MODE button *(14, 16, 17, 19)*

8 MEGA BASS button *(12)*

Radio and Tape Player



1 FM STEREO indicator *(21)*

2 Telescopic antenna *(21)*

3 Cassette compartment

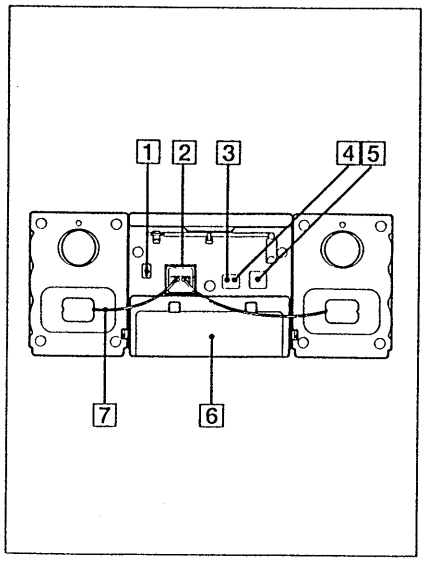
4 Tape operation buttons

5 Dial scale and pointer

6 TUNING control *(21)*

This section is extracted from instruction manual.

Rear Panel



1 AC IN (AC power input) socket *(11)*
Connect to the AC power outlet.

2 SPEAKER OUT terminals

3 RESET button *(27)*
Use only to eliminate instability in micro computer control caused by variations in power supply characteristics.

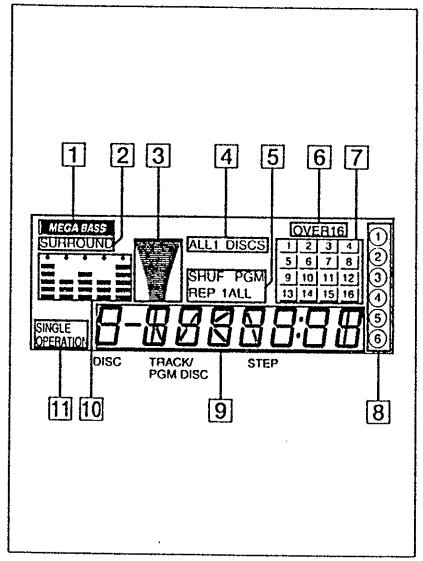
4 ISS (interference suppress switch) *(23)*

5 MIX MIC (mixing microphone) jack (mini-jack) *(24)*

6 Battery compartment *(11)*

7 Speaker wires *(10)*

Display Window



1 MEGA BASS indication

2 SURROUND indication (CFD-610 only)

3 Volume indication

4 ALL DISCS/1 DISC indication

5 CD play mode indications

6 OVER 16 indication

7 Music calendar

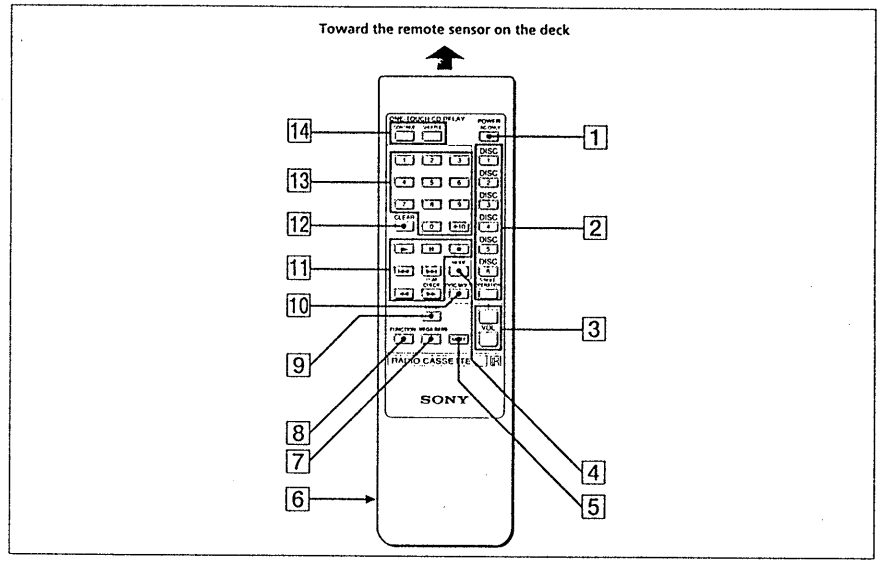
8 Disc number indication

9 Disc number/track number/time indications

10 Sound mode indications

11 SINGLE OPERATION indication

Remote Commander



Controls on the remote commander with the same name as those on the deck have the same function. Some controls such as the number buttons are located only on the remote commander.

1 POWER switch
When you operate the player on batteries, you cannot turn on the power with the remote commander.

2 DISC 1–6 and SINGLE OPERATION buttons

3 VOL (volume) buttons

4 PLAY MODE button

5 MUTE button *(12)*

6 Battery compartment

7 MEGA BASS button *(12)*

8 FUNCTION button

9 SOUND button *(12)*

10 DISC MODE button

11 CD operation buttons
► (play)
II (pause)
■ (stop)
I◄◄ / ►►I (AMS)
◄◄ (search)
►► PGM CHECK (search/program check)

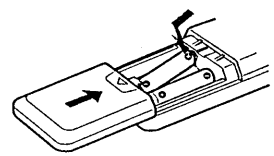
12 CLEAR button

13 Number buttons *(17)*

14 ONE-TOUCH CD RELAY buttons
CONTINUE button
SHUFFLE button

Installing batteries

Insert two size AA (R6) batteries (not supplied) into the battery compartment.



To avoid malfunction, keep the commander away from direct sunlight or strong illumination.

SECTION 2
DIAGRAMS

2-1. PIN FUNCTION

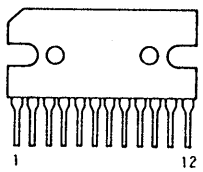
• IC801 MSM65355-013GS-V1K2 (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Function
1—4	COM1—4	O	Not used.
5—20	SGE0—15	O	Not used.
21	AGND	—	GND for AD.
22—25	KEY1—4	I	KEY inputs 1—4
26	CH-DISC	I	DISC IN/OUT & 8/12cm detection.
27	CH-STOCK	I	CD stock position detection
28	CH-TRAY-O/C	I	CD tray OPEN/CLOSE detection
29	CH-T/M-U/D	I	Traverse UP/DOWN detection
30	VRH	—	AD reference voltage
31	AVDD	—	Voltage for AD.
32	ADCLK	I/O	Not used.
33	DTCLK	I/O	
34	DATA I/O	I/O	
35	R/$\overline{W}$	I/O	
36	CE1	I/O	
37	$\overline{CE2}$	I/O	
38	355CH	I/O	Connect to GND.
39	TC-PAUSE	I/O	TC DECK control of SEAMLESS REC.
40	MEGA BASS	I/O	MEGA BASS ON/OFF output
41	SURROUND	I/O	SURROUND ON/OFF output
42	DISC-ERR	I/O	DISC abnormal stock detection
43	P-CONT	I/O	POWER ON/OFF output
44	TAPE	I/O	At the function on TAPE, "H" output.
45	RADIO	I/O	At the function on RADIO, "H" output.
46	CD	I/O	At the function on CD, "H" output.
47	TAPEDUB	I/O	Not used.
48	DT-MTR2	I/O	DISC-CASE & T/M control
49	DT-MTR1	I/O	DISC-CASE & T/M control
50	TL-MTR2	I/O	TRAY & L-PLATE control
51	TL-MTR1	I/O	TRAY & L-PLATE control
52	L-U/L	I/O	LOAD/UNLOAD position detection of PLATE.
53	CASE-RST	I/O	Reset position detection of DISC-CASE.
54	CH-CASE	I/O	Position detection of DISC-CASE.
55	CH-PLUNGER	I/O	Plunger control of changer.
56	A-MUTE	I/O	AUDIO MUTE output
57	DA-CLK	I/O	D/A CONVERTER CLOCK output
58	DA-CE	I/O	D/A CONVERTER CHIP SELECT output
59	DA-DATA	I/O	D/A CONVERTER DATA output
60	——	—	Not used.
61	C-SQSO	I/O	CD SUB Q input
62	C-SQCK	I/O	CLK output for CD SUB Q reading.
63	RMC	I/O	Remote commander input
64	$\overline{REG\text{-}CHK}$	I/O	Not used.

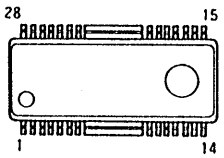
Pin No.	Pin Name	I/O	Pin Function
65	$\overline{\text{REC}}$	I/O	REC input
66	LCD-$\overline{\text{BUSY}}$	I/O	Input permission discrimination of LCD driver IC.
67	CH-LED1	I/O	DISC1 display LED ON/OFF
68	VDD	—	Power supply
69	——	—	Not used.
70	C-MUTE	I/O	CD MUTE output
71	C-CLK	I/O	CLK output for CD DSP COMMAND.
72	C-SCOR	I/O	CD SCOR input
73	C-XLT	I/O	CD SYSTEM LATCH output
74	C-DATA	I/O	CD DSP COMMAND DATA output
75	C-XRST	I/O	CD SYSTEM RESET output
76	C-CONT	I/O	CD COUNT input
77	$\overline{\text{OSC1}}$	O	MAIN CLOCK OUT (4.19MHz)
78	OSC0	O	MAIN CLOCK IN
79	GND	—	GND
80	XT	I	CLOCK IN for clock.
81	$\overline{\text{XT}}$	O	CLOCK OUT for clock. (32.768kHz)
82	LCD-C/$\overline{\text{D}}$	I/O	DATA/COMMAND discrimination output to LCD driver IC.
83	WP	I/O	WAKE UP input/REG-CHK from STOP mode.
84	LCD-DATA	I/O	Serial•data output to LCD driver IC.
85	LCD-$\overline{\text{CS}}$	I/O	Chip•select output of LCD driver IC.
86	LCD-CLK	I/O	Serial•clock output to LCD driver IC.
87	$\overline{\text{RST}}$	I	Reset input
88	$\overline{\text{CH-RST}}$	I	Changer decrease voltage detection
89	——	—	No connect.
90	CH-LED2	I/O	DISC2 display LED ON/OFF
91	CH-LED3	I/O	DISC3 display LED ON/OFF
92	CH-LED4	I/O	DISC4 display LED ON/OFF
93	CH-LED5	I/O	DISC5 display LED ON/OFF
94	CH-LED6	I/O	DISC6 display LED ON/OFF
95	CH-LED7	I/O	SINGLER OPERATION display LED ON/OFF
96—98	VDD1—3	—	(Bias output for LCD drive.)
99, 100	C1, C2	—	(Bias generation condenser for LCD drive.)

2-2. SEMICONDUCTOR LEAD LAYOUTS

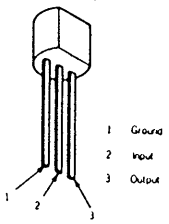
BA3933



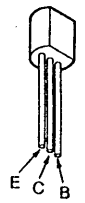
KA9258D



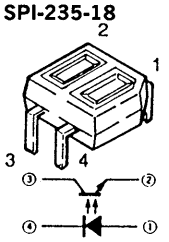
S-81250PG



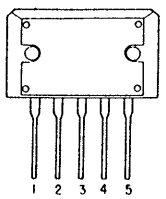
KSC1008-Y
2SB1013-2
2SB1013-4



SPI-235-18



BA7755A



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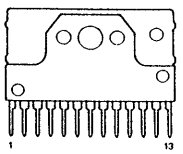
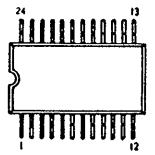
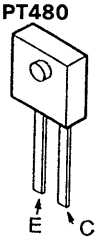


SM5874AM1

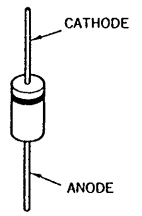


(TOP VIEW)

PT480



1N5401TM
10ES



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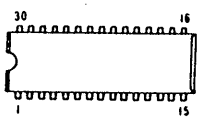
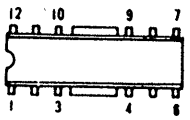
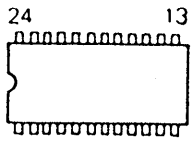


(Top view)

LB1649

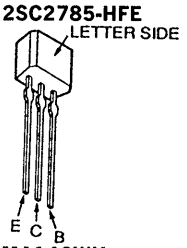


TA2068N

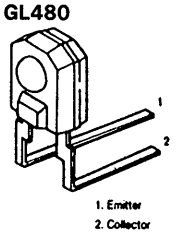


(Top view)

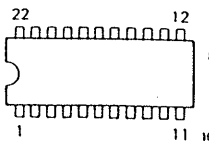
2SC2785-HFE



GL480

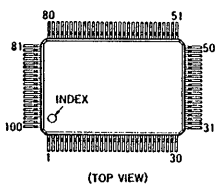


CXA1352AS



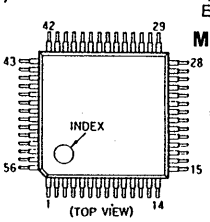
(Top view)

MSM65355
-013GS-V1K2



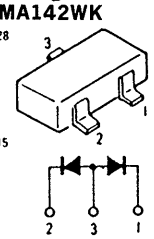
(TOP VIEW)

μPD7225GB-3B7

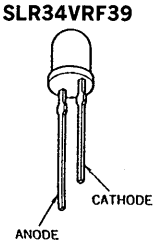


(TOP VIEW)

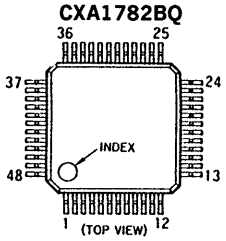
MA142WK



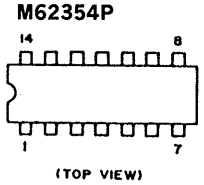
SLR-34DU70F085
SLR-34DU70F107
SLR-34DU70F124
SLR-34DU70F130
SLR34VRF39



CXA1782BQ

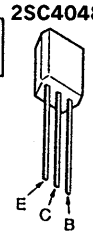


M62354P

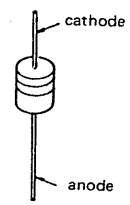


(TOP VIEW)

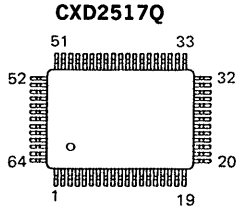
DTA114YS
DTC143TS
2SA1502
2SC4048



MTZJ-13B
1SS133

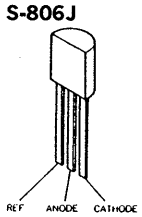


CXD2517Q

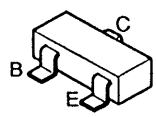


(TOP VIEW)

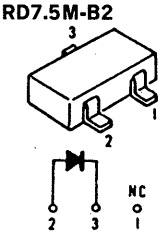
S-806J



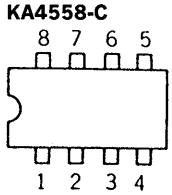
DTC144WS
2SC4047



RD7.5M-B2



KA4558-C



(Top view)

2-3. PRINTED WIRING BOARDS—MAIN SECTION— • Refer to page 8 for Semiconductor Lead Layouts.

Note on Printed Wiring Board:

- ○— : parts extracted from the component side.
- ⬚ indicates side identified with part number.
- ▩ : Pattern on the side which is seen.

Note on Schematic Diagram:

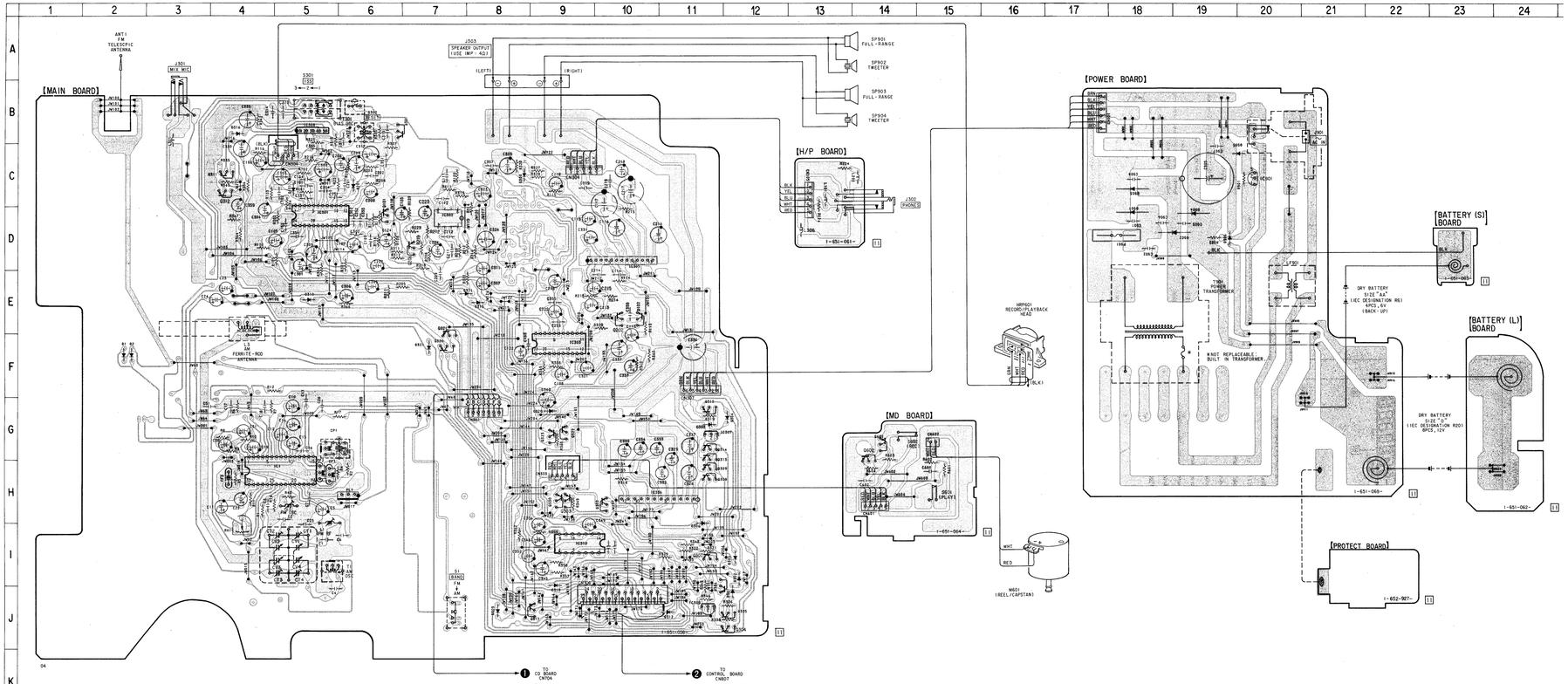
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

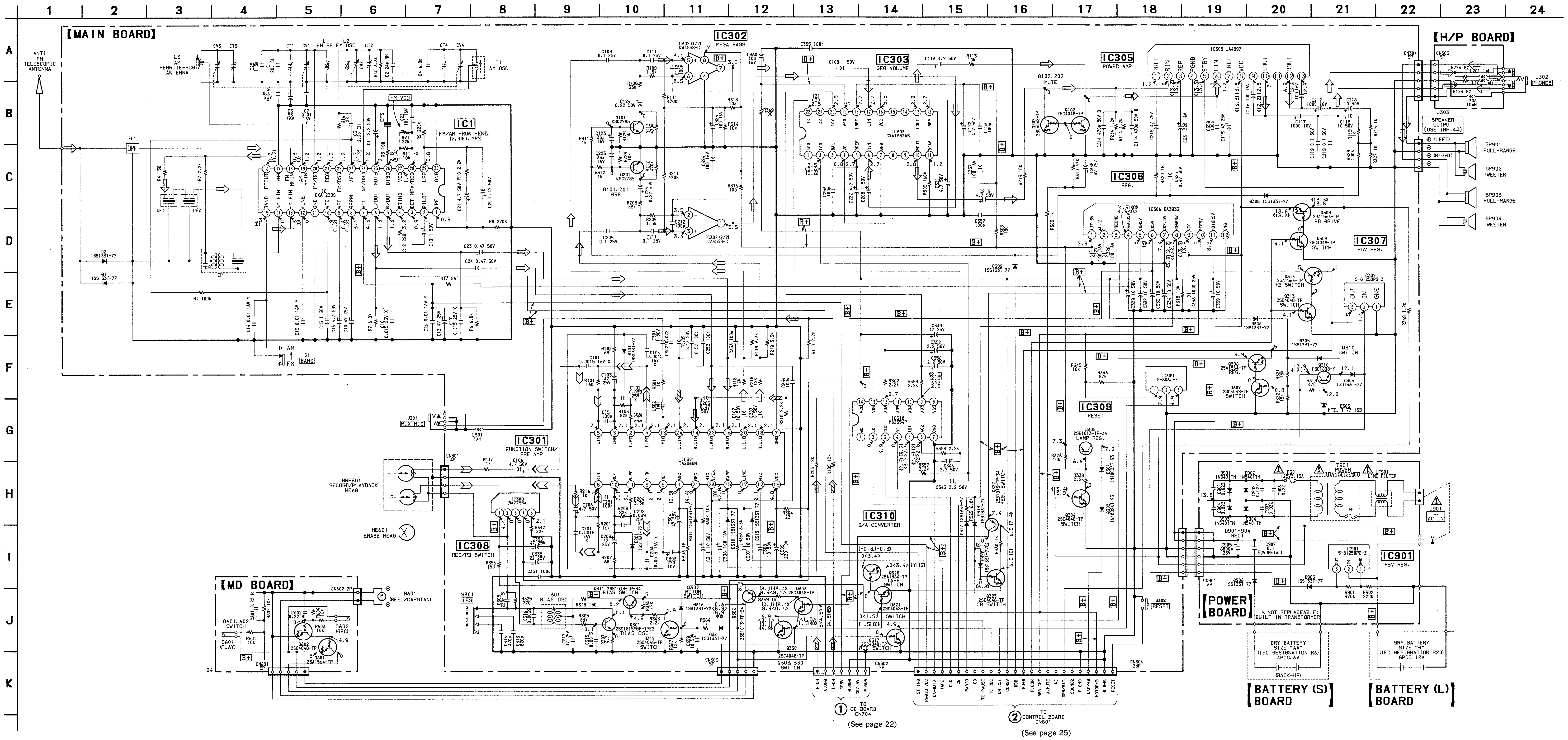
- B+ : B+ Line
- ▭ : adjustment for repair.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
  ( ): AM
  < >: TAPE PB
  [ ]: TAPE REC
  << >>: CD PLAY
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : PB
  ⇨ : REC
  ⇨ : CD

• **Semiconductor Location**

Ref. No.	Location
D1	F-2
D2	F-2
D101	C-5
D201	C-6
D301	J-12
D302	I-12
D303	G-11
D304	G-11
D305	I-12
D306	H-11
D308	C-8
D309	J-8
D310	E-5
D311	E-7
D312	J-11
D313	I-9
D315	E-8
D316	B-4
D320	G-9
D321	F-7
D901	D-18
D902	D-18
D903	C-18
D904	D-19
D905	C-19
D906	D-19
IC1	H-5
IC301	D-5
IC302	D-7
IC303	I-9
IC305	D-10
IC306	H-10
IC307	G-11
IC308	B-5
IC309	J-11
IC310	I-9
IC901	C-20
Q101	D-6
Q102	E-10
Q201	D-7
Q202	E-10
Q301	B-6
Q302	H-10
Q303	I-9
Q304	J-12
Q305	J-12
Q306	I-11
Q307	I-11
Q308	H-11
Q309	H-11
Q310	G-11
Q311	C-4
Q312	C-4
Q313	G-11
Q314	G-11
Q317	J-8
Q320	F-7
Q321	E-7
Q322	G-9
Q323	G-9
Q330	H-9
Q601	G-14
Q602	G-14



2-4. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 32 for IC Block Diagrams.



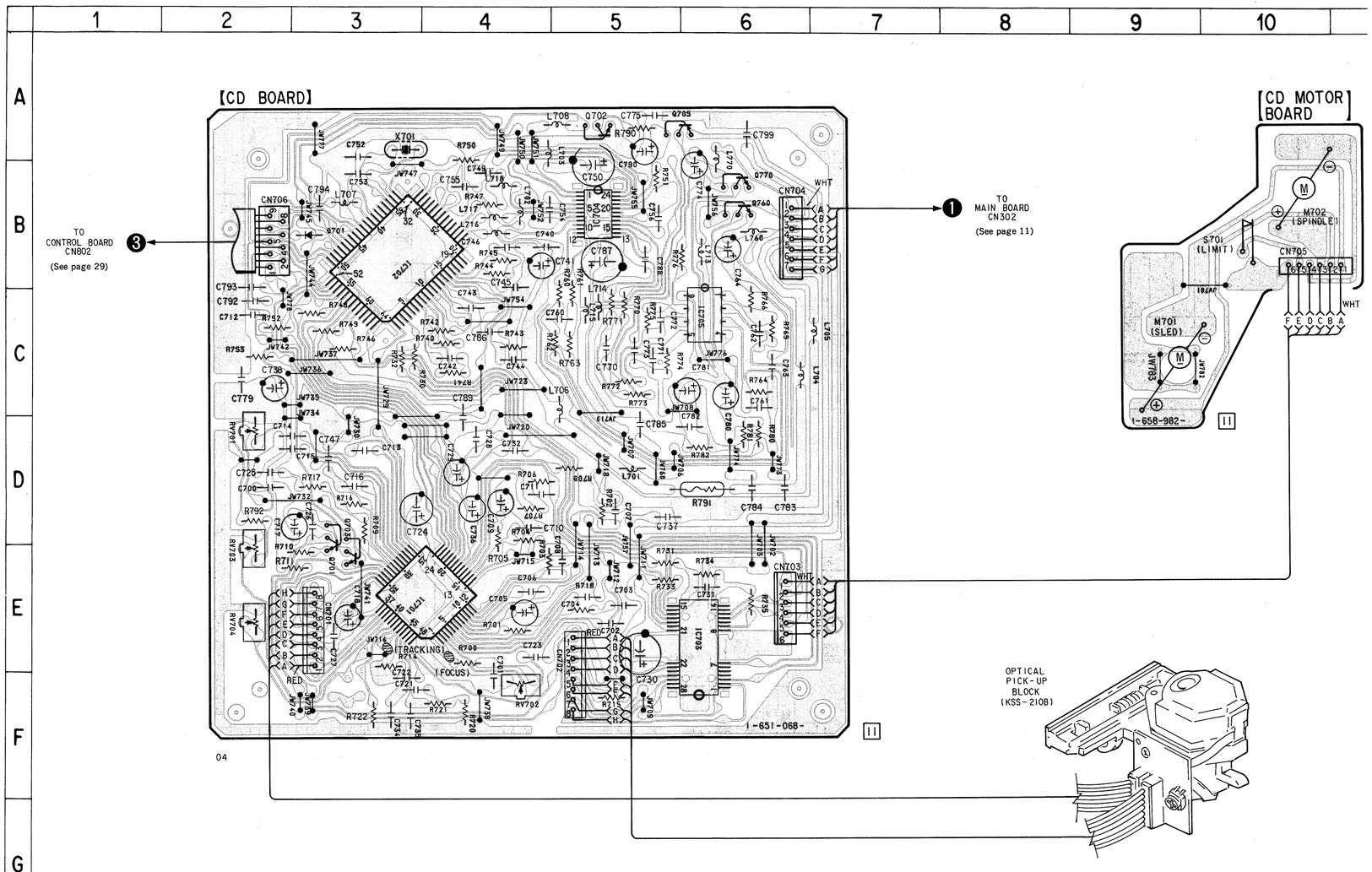
【MAIN BOARD】
ANT1 FM TELESCOPIC ANTENNA
L3 AM FERRITE-ROD ANTENNA
T1 AM OSC
FL1 BPF
IC1 FM/AM FRONT-END, IF, DET, MPX
IC1 CXA1238S
FM VCO
S1 BAND
AM
FM
IC302 MEGA BASS
IC302 (1/2) KA4558-C
IC302 (2/2) KA4558-C
Q101, 201 DBB
IC303 GEQ VOLUME
IC303 CXA1352AS
Q102, 202 MUTE
IC305 POWER AMP
IC305 LA4597
IC306 REG.
IC306 BA3933
Q308 2SA1564-TP LED DRIVE
Q309 2SC4048-TP SWITCH
IC307 +5V REG.
IC307 S-81250PG-Z
Q314 2SA1564-TP +B SWITCH
Q313 2SC4048-TP SWITCH
Q310 SWITCH
Q306 2SA1564-TP REG.
Q307 2SC4048-TP SWITCH
IC309 RESET
IC309 S-806J-Z
Q305 2SB1013-TP-34 LAMP REG.
Q304 2SC4048-TP SWITCH
【H/P BOARD】
J302 PHONES
J303 SPEAKER OUTPUT (USE IMP:4Ω)
SP901 FULL-RANGE
SP902 TWEETER
SP903 FULL-RANGE
SP904 TWEETER
J301 MIX MIC
IC301 FUNCTION SWITCH/ PRE AMP
IC301 TA2068N
HRP601 RECORD/PLAYBACK HEAD
HE601 ERASE HEAD
IC308 REC/PB SWITCH
IC308 BA7755A
T301 BIAS OSC
Q311 2SB1013-TP-34 BIAS SWITCH
Q301 2SC1815YGR-TPE2 BIAS OSC
Q312 2SC4048-TP SWITCH
Q302 MOTOR SWITCH
Q303, 330 SWITCH
IC310 D/A CONVERTER
IC310 M62354P
Q320 2SA1564-TP TAPE SWITCH
Q321 2SC4048-TP SWITCH
Q317 2SC4048-TP REC SWITCH
Q322 2SB1013-TP-34 REG. SWITCH
Q323 2SC4048-TP CD SWITCH
S302 RESET
【MD BOARD】
M601 (REEL/CAPSTAN)
Q601, 602 SWITCH
S601 (PLAY)
S602 (REC)
CN301 4P
CN303 5P
CN302 7P
CN306 25P
CN304 5P
CN305 5P
CN601 5P
CN602 2P
CN901 6P
R-CH A.GND L-CH CD5V D.GND CD7.5V P.GND
ST IND RADIO VCC DA-DATA TAPE CLK CE RADIO CD TC PAUSE TC REC CH.RST COM5V DBB BU+B P.CON REG.CHE A.MUTE NC OPR/BAT SOUND2 P GND LAMP+B MOTOR+B D GND RESET
① TO CD BOARD CN704 (See page 22)
② TO CONTROL BOARD CN801 (See page 25)
【POWER BOARD】
D901-904 RECT
T901 POWER TRANSFORMER
F901 125V3.15A
LF901 LINE FILTER
J901 AC IN
IC901 +5V REG.
IC901 S-81250PG-Z
* NOT REPLACEABLE: BUILT IN TRANSFORMER
DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 4PCS, 6V (BACK-UP)
【BATTERY (S) BOARD】
DRY BATTERY SIZE "D" (IEC DESIGNATION R20) 8PCS, 12V
【BATTERY (L) BOARD】

2-5. PRINTED WIRING BOARDS—CD SECTION— • Refer to page 8 for Semiconductor Lead Layouts.

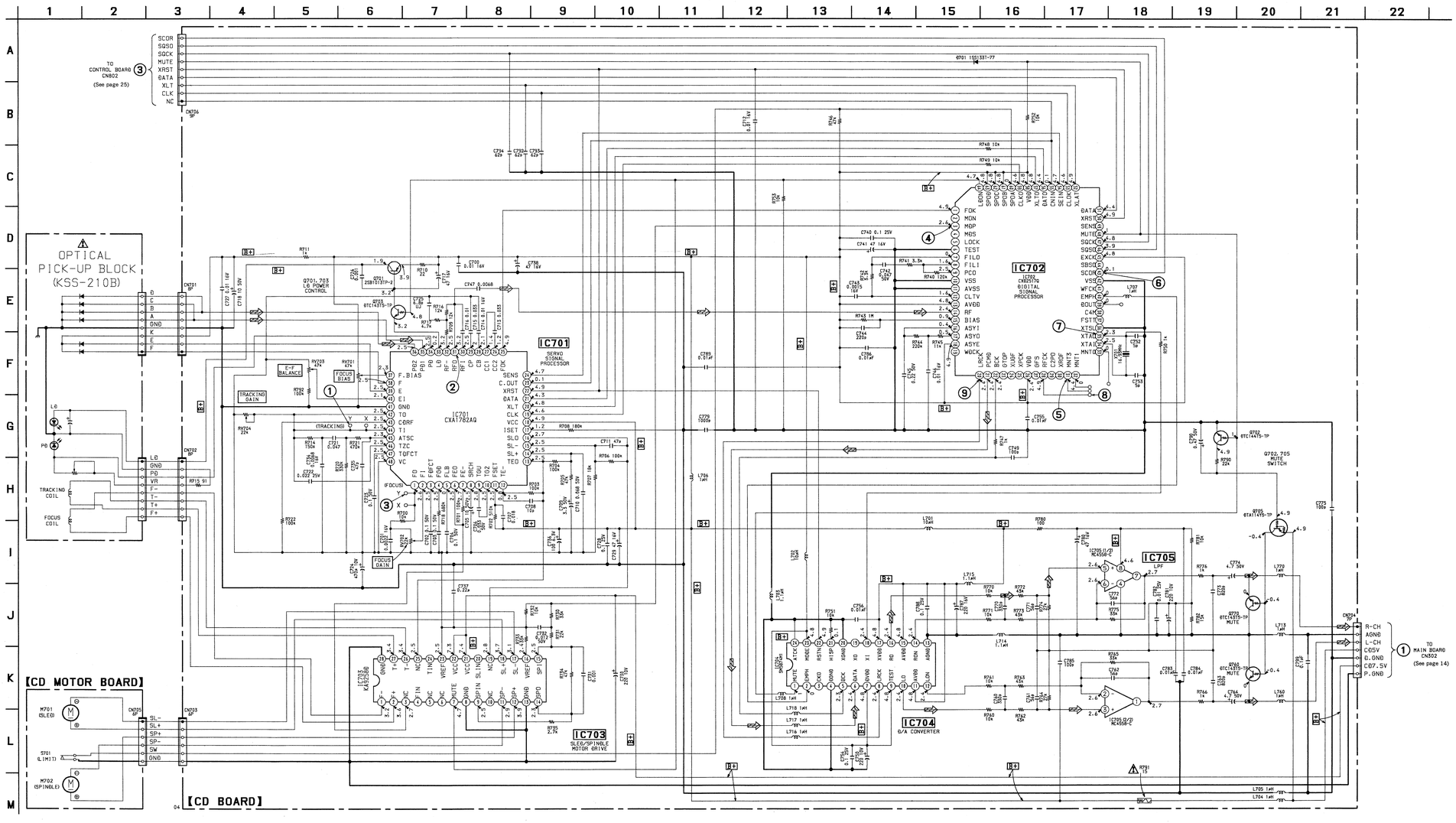
• Semiconductor Location

Ref. No.	Location
D701	B-3
IC701	E-3
IC702	B-3
IC703	E-6
IC704	B-5
IC705	C-6
Q701	E-3
Q702	A-5
Q703	E-3
Q705	A-5
Q760	B-6
Q770	B-6

Note :
- ○— : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.



2-6. SCHEMATIC DIAGRAM—CD SECTION— • Refer to page 32 for IC Block Diagrams.



● Waveforms

1 IC701 (44) PLAY — APPROX 100mVp-p
2 IC701 (31) PLAY — 0.99Vp-p
3 IC701 (1) PLAY — APPROX 200mVp-p
4 IC702 (3) PLAY — 2.8Vp-p, 7.5μsec
5 IC702 (1) PLAY — 5Vp-p, 140μsec
6 IC702 (43) — 5Vp-p, 13.5msec
7 IC702 (55) — 24Vp-p, 60msec
8 IC702 (28) PLAY — 5Vp-p, 140μsec
9 IC702 (20) PLAY — 5Vp-p, 22msec

Note:
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line.
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: CD PLAY
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇨ : CD

2-7. SCHEMATIC DIAGRAM—CONTROL SECTION— • Refer to page 32 for IC Block Diagrams.

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF. 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- (B+) : B+ Line
- Voltage is dc with respect to ground under no-signal conditions.
- no mark: FM
  < > : TAPE PB
  << >> : CD PLAY
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

【FLEXIBLE (E SENSOR) BOARD】

【DISC SENSOR (A) BOARD】

【DISC SENSOR (B) BOARD】

【FLEXIBLE (L SENSOR) BOARD】

【CONNECTOR BOARD】

【CONTROL BOARD】

【LAMP BOARD】

【S. W BOARD】

IC801 M30622MCP-395-V SYSTEM CONTROL

IC802 LCD DRIVER

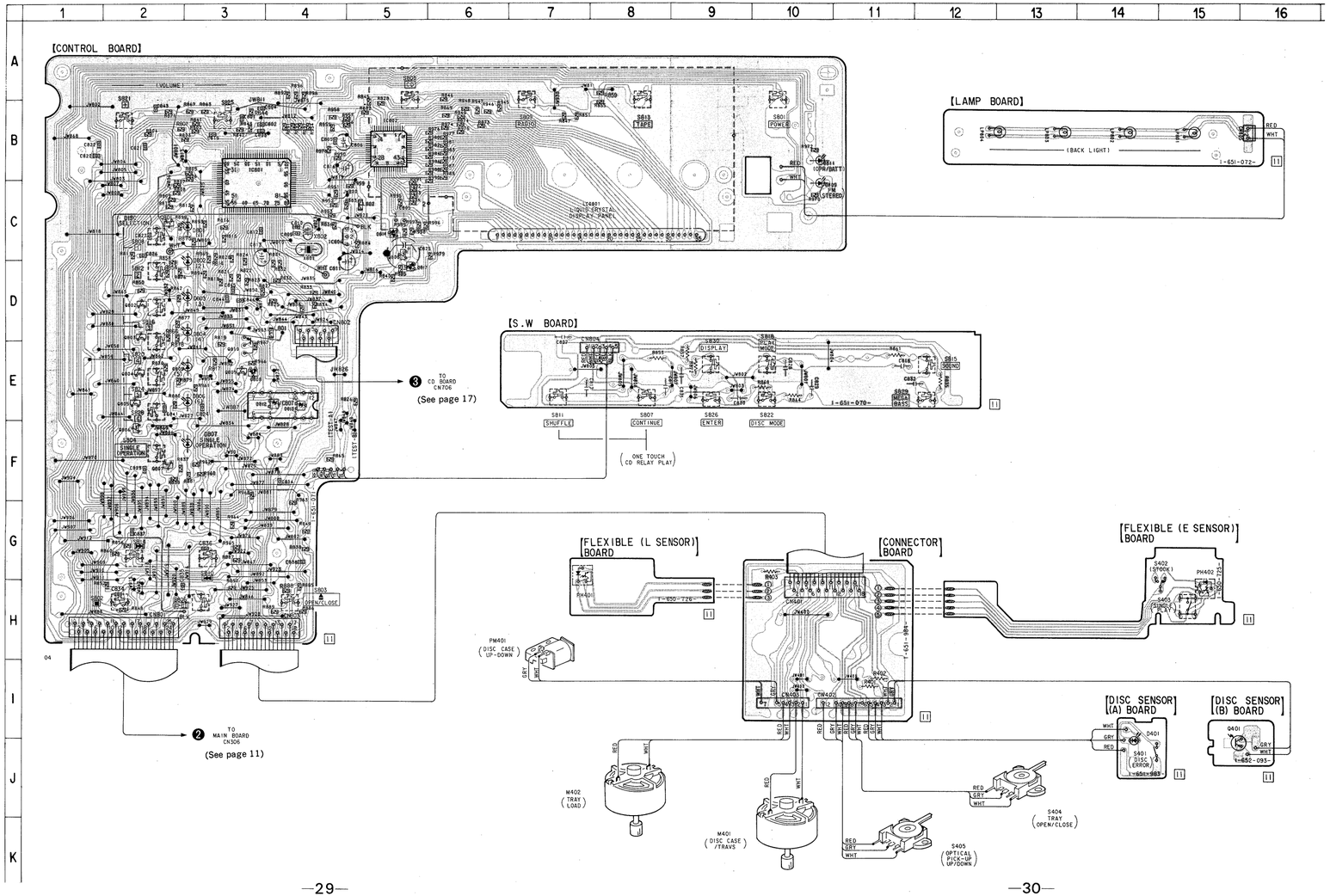
IC805 REMOTE SENSOR

IC806 RESET

IC807 MOTOR DRIVE

LCD801 LIQUID CRYSTAL DISPLAY PANEL

2-8. PRINTED WIRING BOARDS—CONTROL SECTION— • Refer to page 8 for Semiconductor Lead Layouts.



• Semiconductor Location

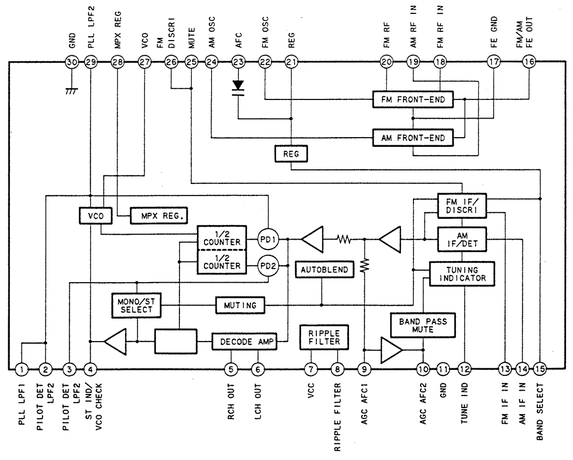
Ref. No.	Location
D401	I-14
D801	C-3
D802	D-3
D803	D-3
D804	D-3
D805	E-3
D806	E-3
D807	F-3
D808	E-3
D809	C-10
D811	B-10
D812	E-4
D813	E-4
D814	C-5
D817	D-5
IC801	B-3
IC802	B-5
IC805	C-5
IC806	C-4
IC807	E-4
PH401	G-7
PH402	H-15
Q401	I-15
Q801	C-2
Q802	D-2
Q803	D-2
Q804	E-2
Q805	E-2
Q806	F-2
Q807	F-2
Q808	C-15
Q809	E-3
Q810	E-3

Note :

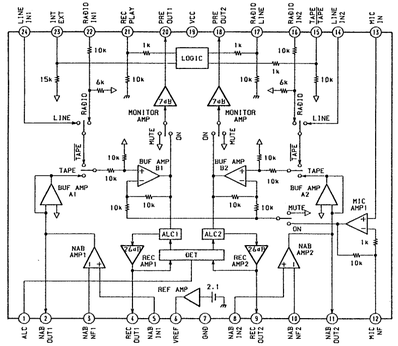
- ○— : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.

• IC Block Diagrams

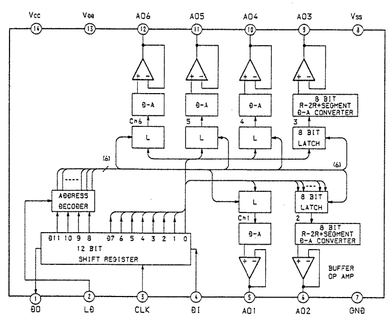
IC1 CXA1238S



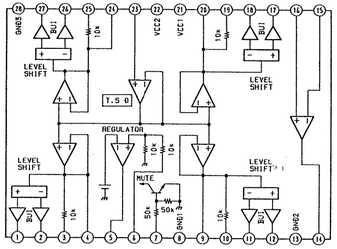
IC301 TA2068N



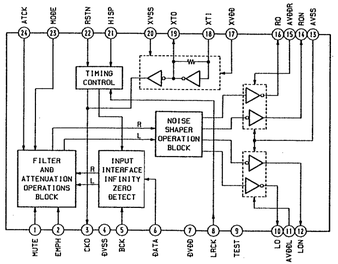
IC310 M62354P



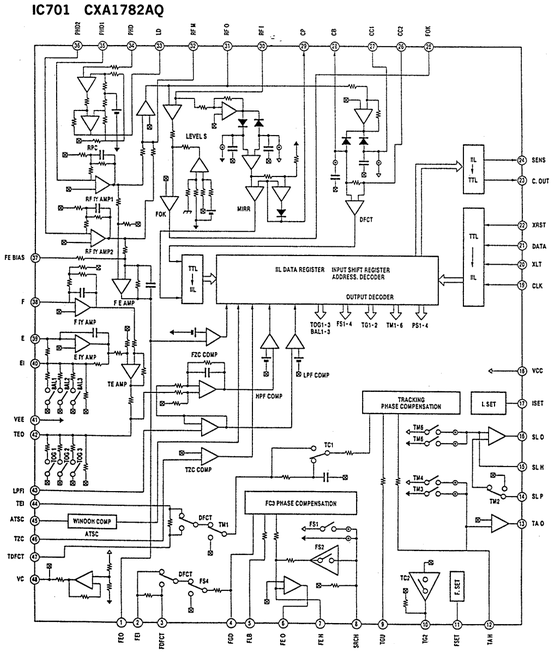
IC703 KA9258D



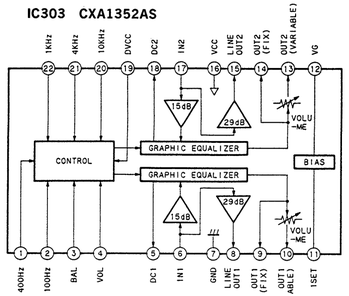
IC704 SM5874M1



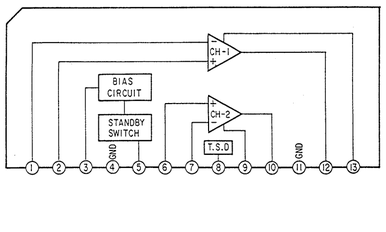
IC701 CXA1782AQ



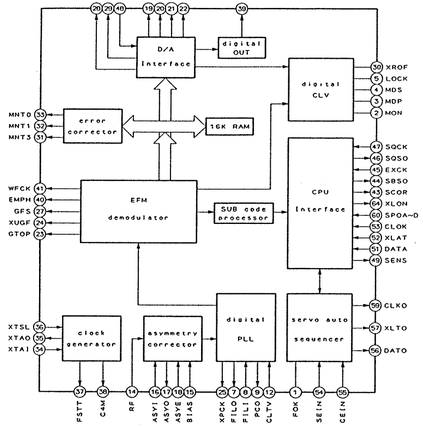
IC303 CXA1352AS



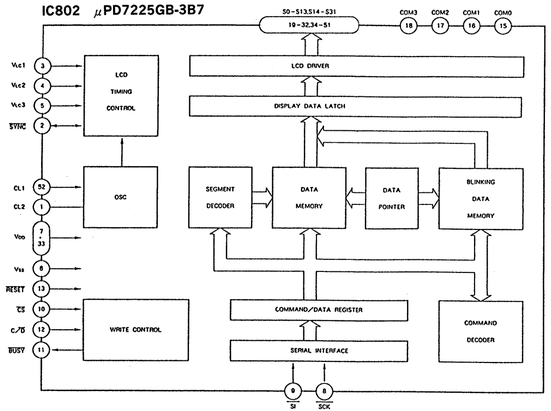
IC305 LA4597



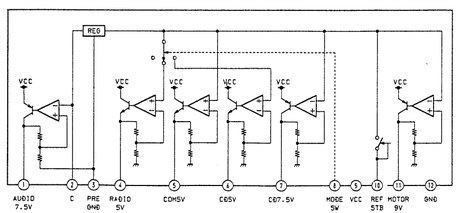
IC702 CXD2517Q



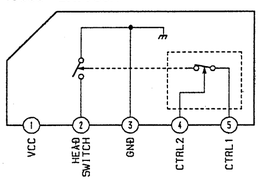
IC802 μPD7225GB-3B7



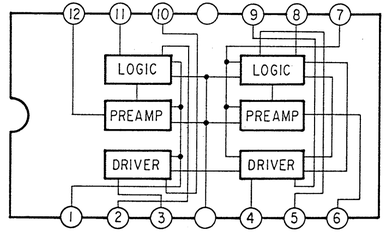
IC306 BA3933



IC308 BA7755A



IC807 LB1649



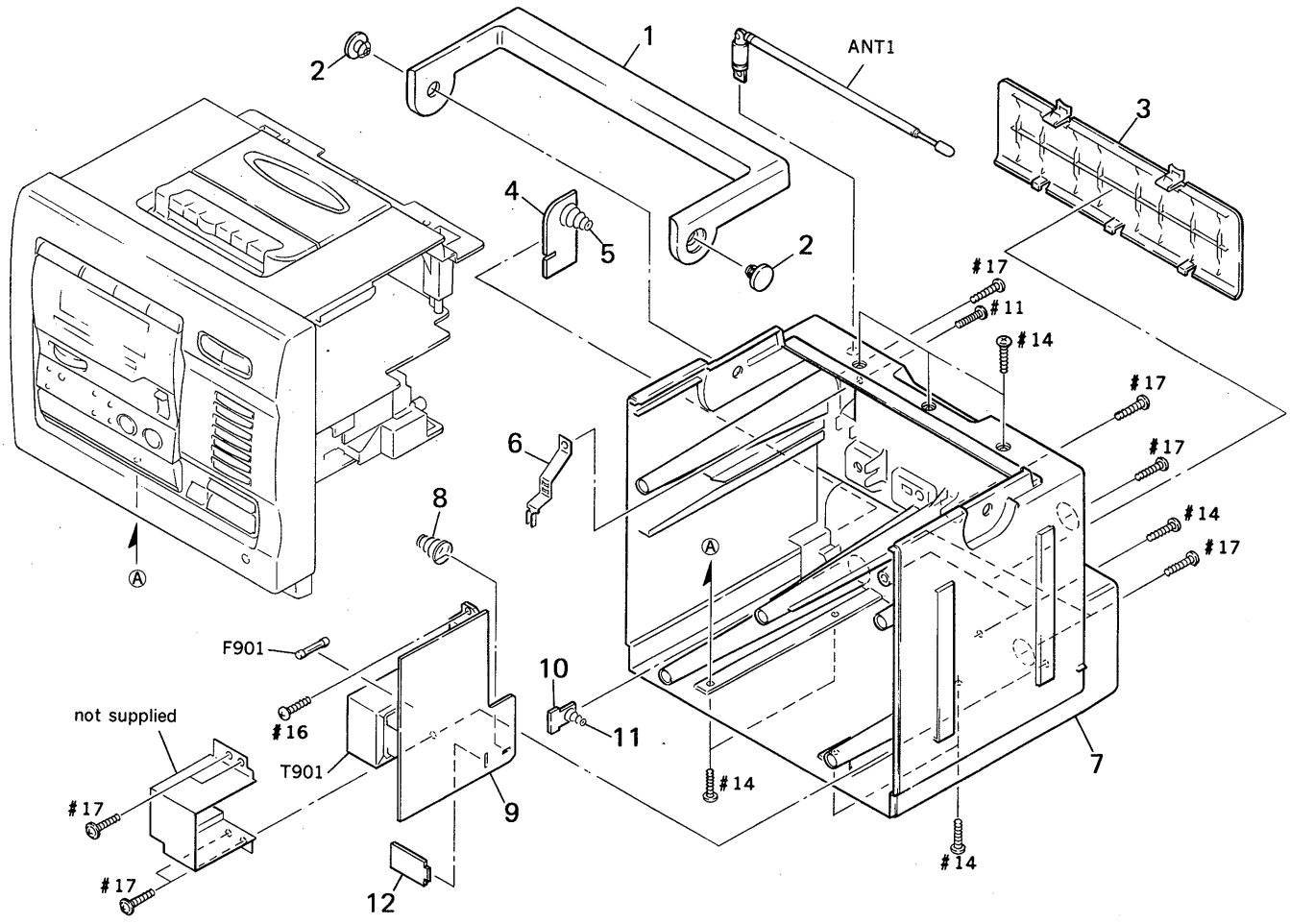
SECTION 3
EXPLODEDVIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

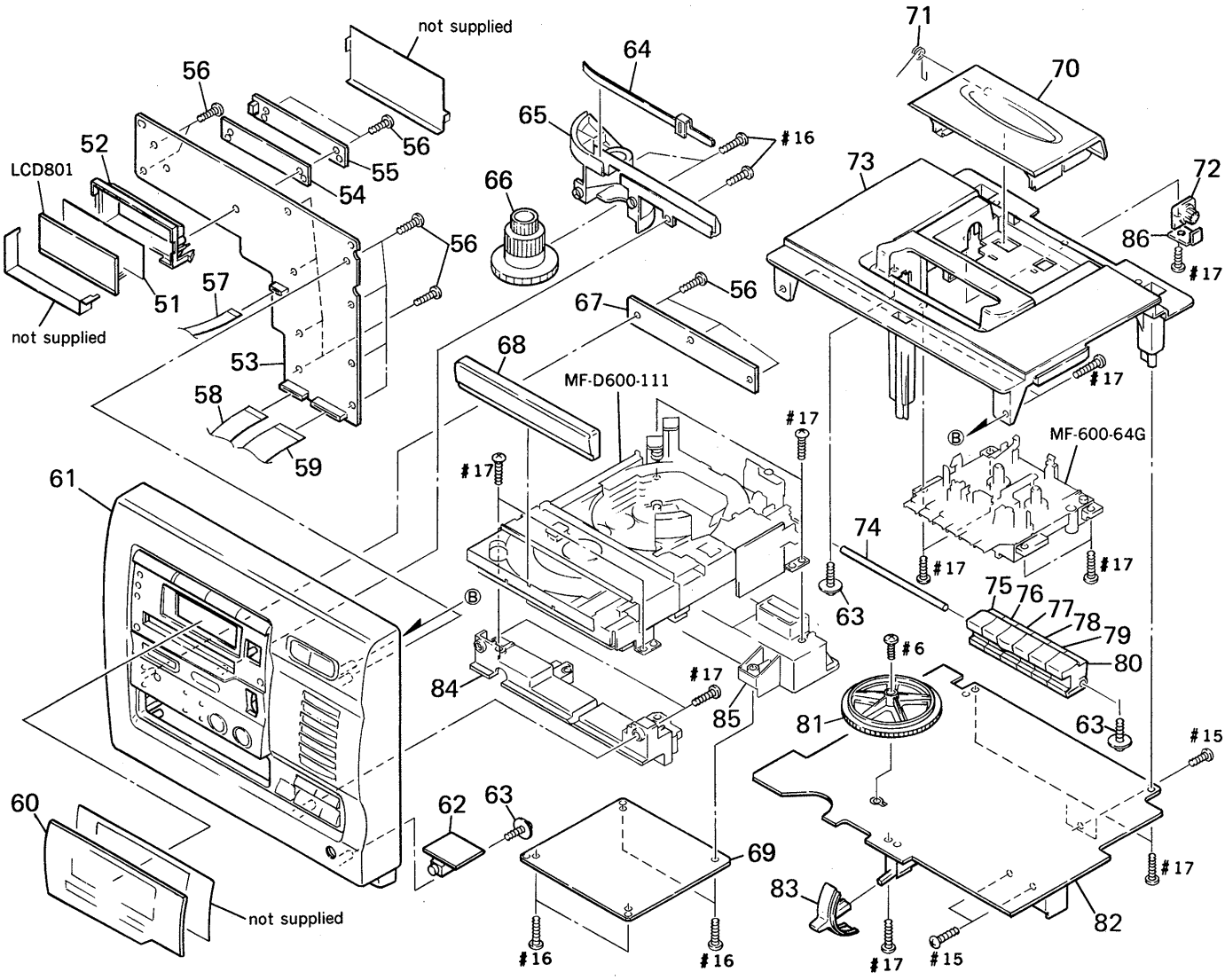
3-1. REAR CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-3366-689-1	HANDLE ASSY	
* 2	3-389-085-01	STOPPER (H)	
3	3-380-485-11	LID, BATTERY CASE	
* 4	1-651-062-11	BATTERY (L) BOARD	
5	3-379-748-01	SPRING (-)	
6	3-911-606-01	TERMINAL, ANT	
7	3-911-605-11	CABINET, REAR	
8	3-379-748-01	SPRING (-)	

Ref. No.	Part No.	Description	Remark
* 9	1-651-069-11	POWER BOARD	
* 10	1-651-063-11	BATTERY (S) BOARD	
11	3-915-417-01	SPRING (S), BATTERY	
* 12	1-652-927-11	PROTECT BOARD	
ANT1	1-501-383-21	ANTENNA, TELESCOPIC	
⚠F901	1-532-745-11	FUSE (3.15A/125V)	
⚠T901	1-423-959-11	TRANSFORMER, POWER	

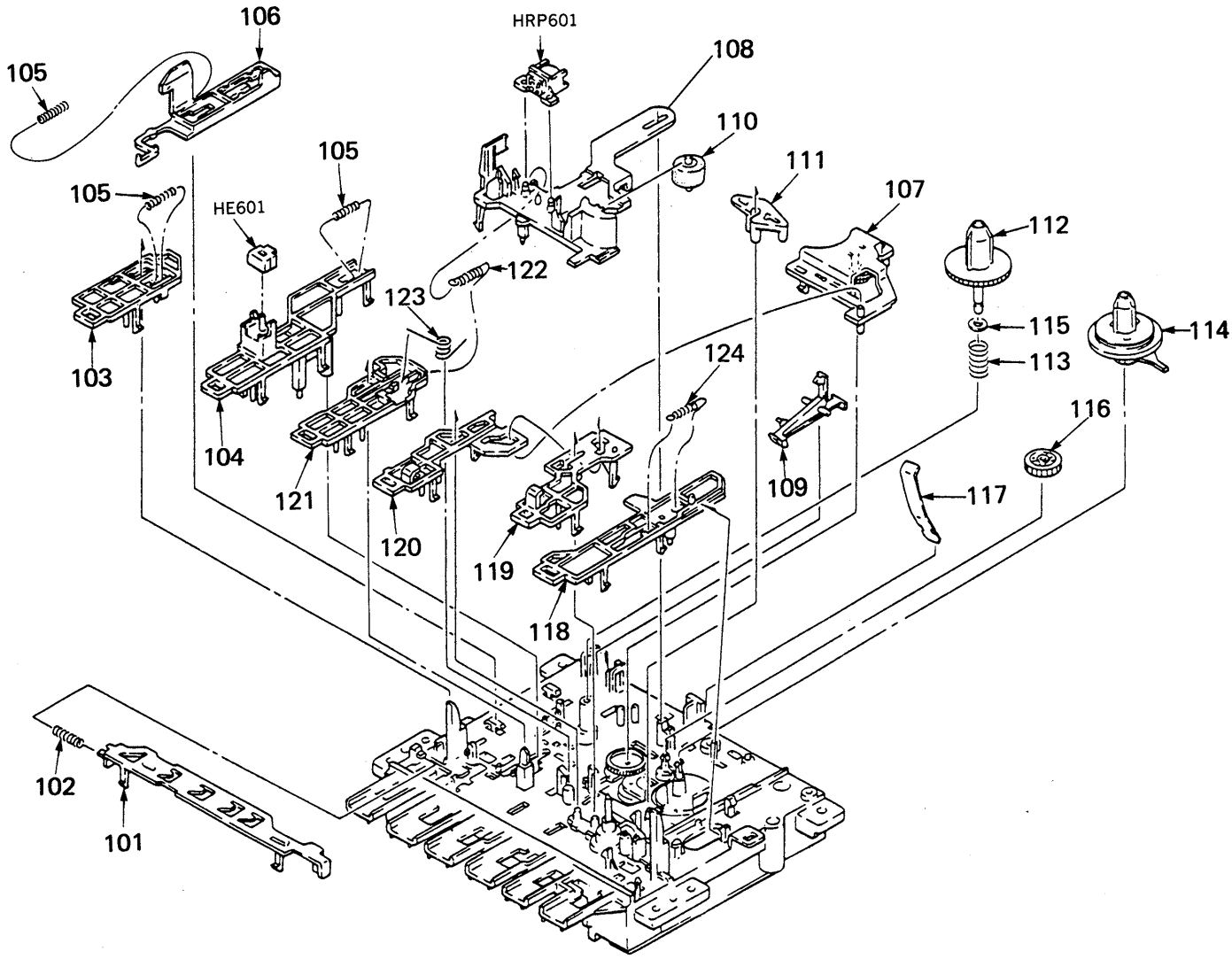
3-2. FRONT CABINET SECTION



Ref. No.	Part No.	Description	Remark
* 51	3-911-653-01	ILLUMINATOR	
52	3-911-658-01	HOLDER, LCD	
* 53	A-3269-103-A	CONTROL BOARD, COMPLETE	
* 54	1-651-066-11	RETAINER BOARD	
* 55	1-651-072-11	LAMP BOARD	
56	4-931-757-41	SCREW (DIA. 2.6X10) (IT3B)	
57	1-765-396-11	WIRE, PARALLEL (FFC) (9 CORE)	
58	1-765-397-11	WIRE, PARALLEL (FFC) (18 CORE)	
59	1-765-398-11	WIRE, PARALLEL (FFC) (25 CORE)	
60	3-911-584-01	WINDOW, LCD	
61	X-3368-063-1	CABINET SUB ASSY, FRONT	
* 62	1-651-061-11	H/P BOARD	
63	3-380-672-11	SCREW, WASHER	
64	3-911-672-01	POINTER, DIAL	
65	3-911-668-01	CHASSIS, TUNING	
66	3-911-666-01	KNOB, TUNING	
* 67	1-651-070-11	S.W BOARD	
68	3-911-670-01	PLATE, CD	
* 69	A-3269-108-A	CD BOARD, COMPLETE	

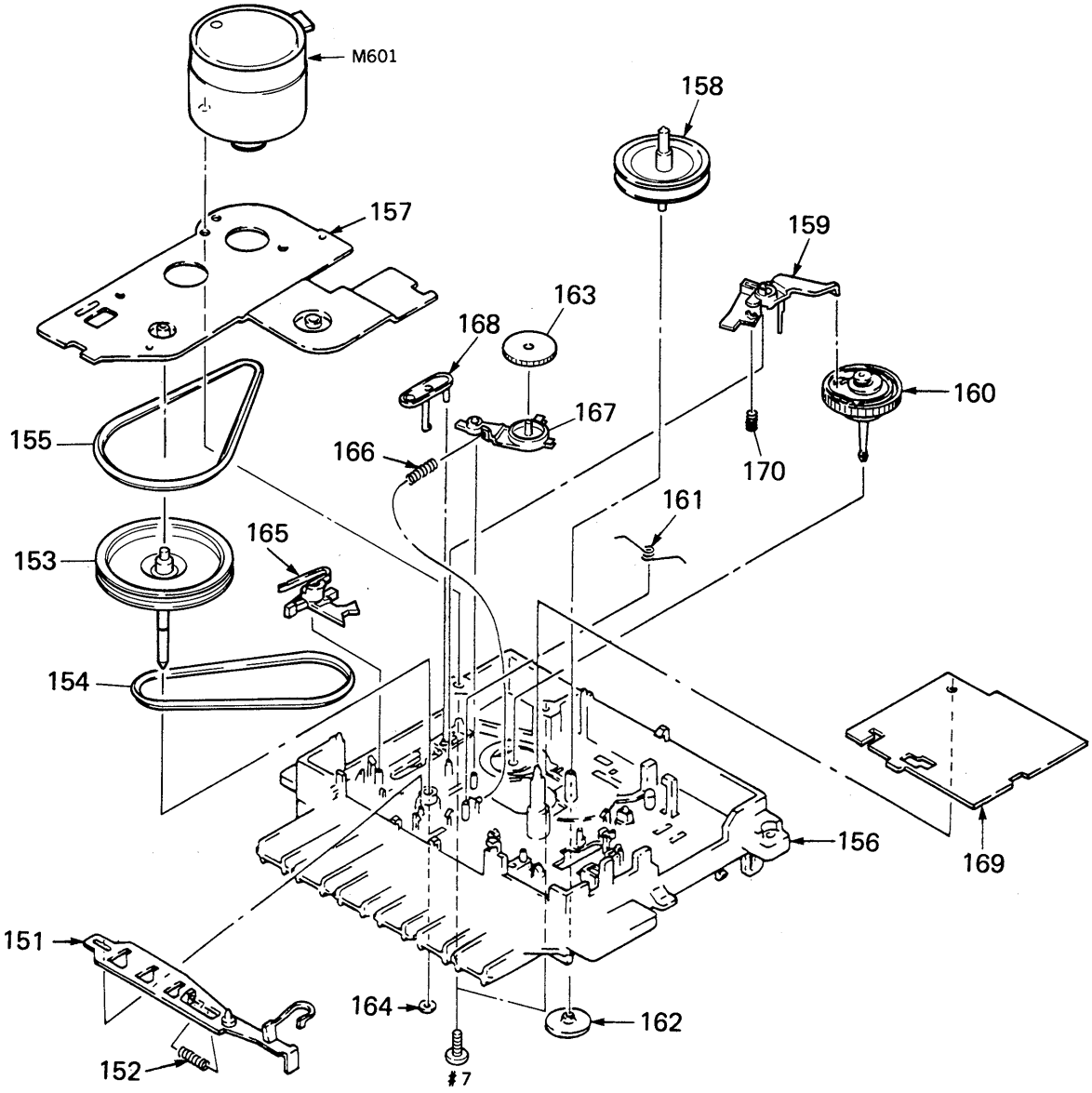
Ref. No.	Part No.	Description	Remark
70	X-3368-057-1	HOLDER SUB ASSY, CASSETTE	
71	3-911-660-01	SPRING, CASSETTE OPEN	
72	3-351-377-01	DAMPER	
73	3-911-657-01	CHASSIS, UPPER	
* 74	3-911-659-01	SHAFT, MD	
75	3-911-635-01	BUTTON (S/EJECT), MD	
76	3-911-634-01	BUTTON (REC), MD	
77	3-911-633-01	BUTTON (PLAY), MD	
78	3-911-632-01	BUTTON (REW), MD	
79	3-911-631-01	BUTTON (FF), MD	
80	3-911-624-01	BUTTON (PAUSE), MD	
81	3-911-621-01	GEAR, PVC	
* 82	A-3269-112-A	MAIN BOARD, COMPLETE	
83	3-911-622-01	KNOB, BAND	
* 84	3-911-620-01	CHASSIS (A), CHANGER	
* 85	3-911-619-01	CHASSIS (B), CHANGER	
* 86	3-915-416-01	RETAINER, DAMPER GEAR	
LCD801	1-810-435-11	DISPLAY PANEL, LIQUID CRYSTAL	

3-3. TAPE MECHANISM DECK SECTION (1) (MF-600-64G)



Ref. No.	Part No.	Description	Remark
101	4-932-695-01	SLIDER (FR), LOCK	
102	4-932-656-11	SPRING, COMPRESSION	
103	4-928-985-01	LEVER, STOP	
104	4-934-511-11	LEVER (S), REC	
105	4-932-648-01	SPRING, COMPRESSION	
106	4-936-206-01	SLIDER (S), EJECT	
107	X-4920-347-1	LEVER (S) ASSY, FR	
108	4-932-693-03	DECK (S), HEAD	
* 109	3-370-187-01	CLAW, ERASING PROTECTION	
110	4-928-962-01	PINCH ROLLER	
111	4-928-982-01	LEVER (C)	
112	4-928-978-01	GEAR (C), SUPPLY REEL	
113	3-343-381-01	SPRING, COMPRESSION	
114	X-4920-350-3	GEAR (S) ASSY, T REEL	
115	4-931-795-11	WASHER	
116	3-343-285-01	GEAR, FF	
117	4-298-957-01	RETAINER, CASSETTE	
118	4-928-994-01	LEVER, PAUSE	
119	4-928-993-01	LEVER, FF	
120	4-928-992-01	LEVER, REW	
121	4-928-991-01	LEVER, PLAY	
122	4-928-972-01	SPRING, TENSION	
123	4-928-973-01	SPRING	
124	3-313-372-01	SPRING, TENSION	
HE601	1-543-525-11	HEAD, MAGNETIC (ERASE)	
HRP601	1-543-714-11	HEAD, MAGNETIC (REC/PB)	

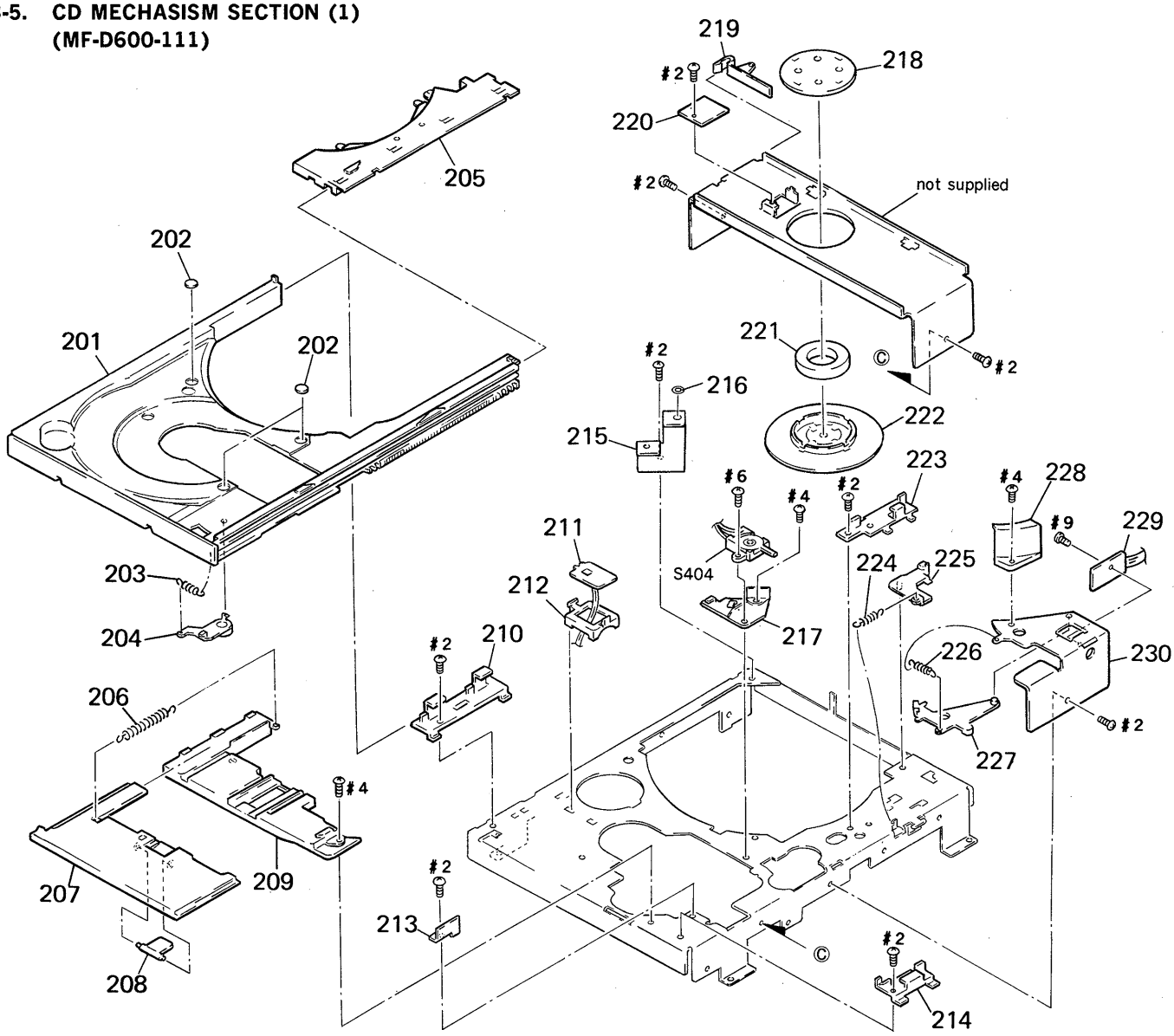
3-4. TAPE MECHANISM DECK SECTION (2) (MF-600-64G)



Ref. No.	Part No.	Description	Remark
151	4-928-996-11	LEVER, SW	
152	4-932-656-11	SPRING, COMPRESSION	
153	X-4920-923-1	WHEEL (W) ASSY, CAPSTAN	
154	4-928-974-01	BELT (MIDWAY)	
155	4-928-951-01	BELT (CAPSTAN)	
156	X-4920-348-1	CHASSIS (S) ASSY, MECHANICAL	
* 157	X-4918-598-1	PLATE ASSY, GROUND	
158	X-3366-943-1	PULLEY ASSY, GEAR	
159	3-904-621-01	LEVER (S.OFF) (S)	
160	X-3366-942-1	LIMITER ASSY, FWD	
161	4-928-958-01	SPRING, FR RETURN	

Ref. No.	Part No.	Description	Remark
162	4-928-967-01	GEAR (C), MIDWAY	
163	3-904-615-01	GEAR (FWD)	
164	3-343-358-01	RING, RETAINING	
165	3-904-620-01	LEVER (S.OFF) (T)	
166	3-905-168-01	SPRING, COMPRESSION	
167	3-904-619-01	LEVER (FWD)	
168	4-928-961-01	PLATE, PAUSE LOCK	
* 169	1-691-064-11	MD BOARD	
170	3-904-617-01	SPRING, COMPRESSION	
M601	X-4919-956-1	MOTOR ASSY	

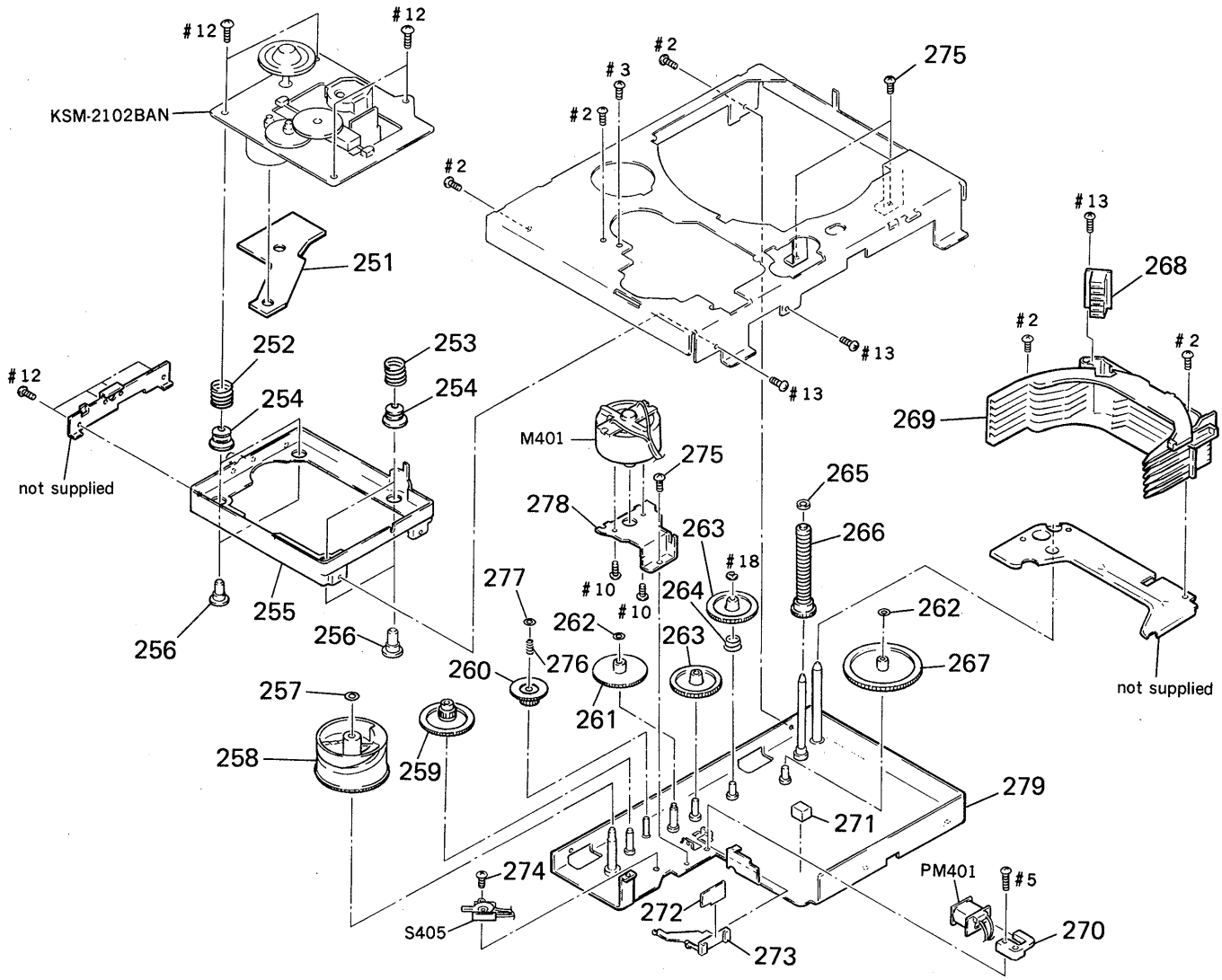
3-5. CD MECHASISM SECTION (1) (MF-D600-111)



Ref. No.	Part No.	Description	Remark
201	3-910-684-01	BASE, DISK	
202	3-910-695-01	FELT	
203	3-910-731-01	SPRING	
204	3-910-685-01	LEVER, L LOCK	
205	A-3300-346-A	PLATE ASSY, LOADING	
206	3-910-728-01	PLATE (SPR), COVER	
207	3-910-672-01	PLATE (A), COVER	
208	3-910-674-01	STOPPER, DISK	
209	3-910-673-01	PLATE (B), COVER	
* 210	3-910-661-01	GUIDE (L1)	
* 211	1-652-093-11	DISC SENSOR (B) BOARD	
* 212	3-910-679-01	SENSOR (BKT), DISK	
213	3-912-773-01	BASE (BKT), DISK	
* 214	3-910-662-01	GUIDE (R1)	
215	3-910-704-01	GEAR (BKT), WORM	
216	3-325-697-01	WASHER	

Ref. No.	Part No.	Description	Remark
217	3-910-675-01	STOPPER (A), GUIDE	
218	3-910-691-01	CLAMP	
219	3-912-772-01	GUARD, DISK	
* 220	1-651-983-11	DISC SENSOR (A) BOARD	
221	3-910-720-01	MAGNET	
222	3-910-692-01	HOLDER, MG	
* 223	3-910-664-01	GUIDE (R3)	
224	3-910-723-01	LEVER (SPR), LOCK	
225	3-910-665-01	LEVER, LOCK	
226	3-910-729-01	LEVER (SPR), D SUPPORT	
227	3-910-677-01	LEVER (3), DISK SUPPORT	
228	3-910-678-01	STOPPER, GUIDE	
229	1-650-726-11	FLEXIBLE (L SENSOR) BOARD	
* 230	3-910-702-01	PLATE, GUIDE	
S404	1-571-300-31	SWITCH, ROTARY (TRAY OPEN/CLOSE)	

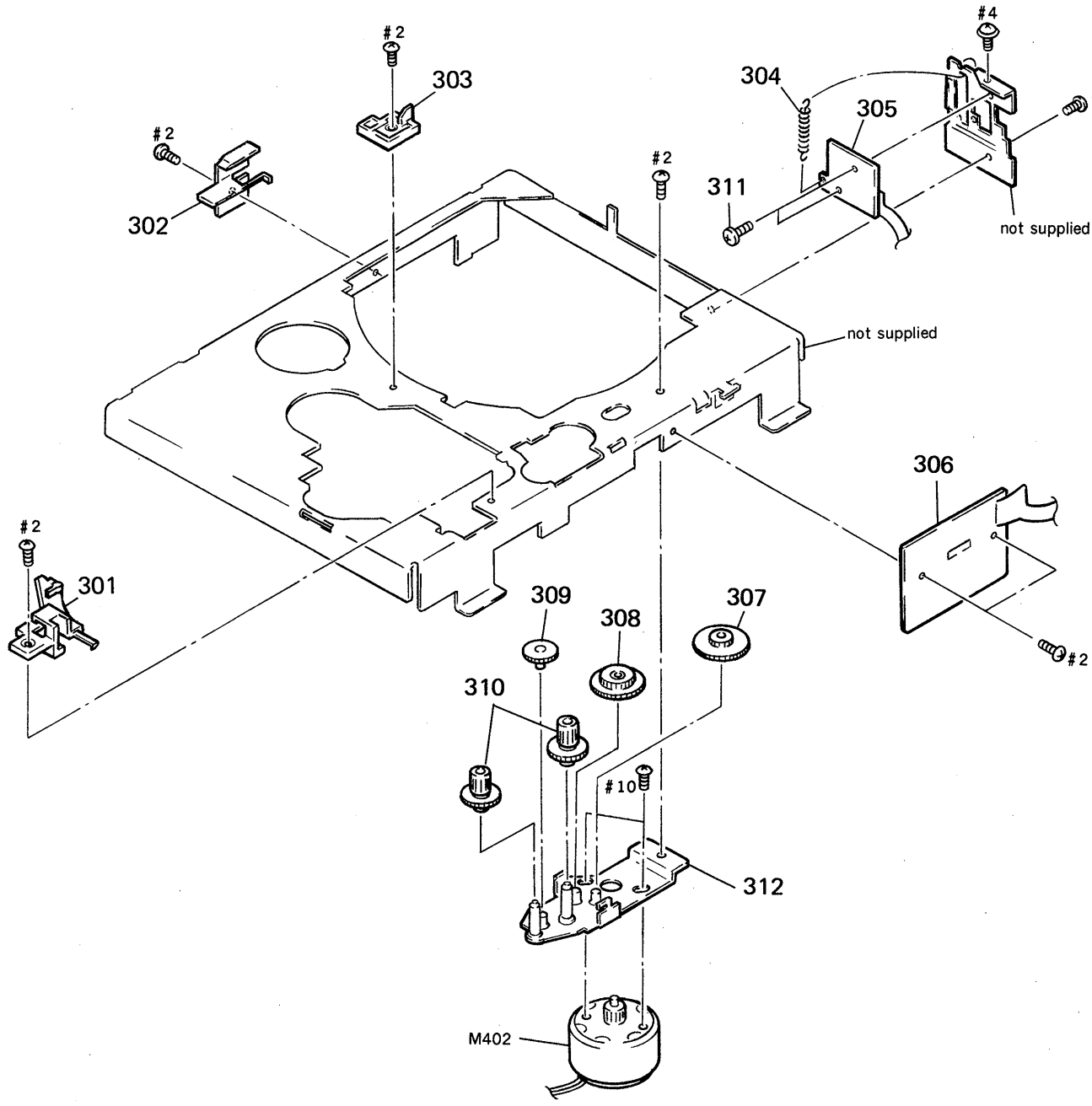
3-6. CD MECHANISM SECTION (2) (MF-D600-111)



Ref. No.	Part No.	Description	Remark
* 251	1-651-982-11	CD MOTOR BOARD	
252	3-910-733-01	FLOATING (SPR) (A)	
253	3-910-734-01	FLOATING (SPR) (B)	
254	3-910-693-01	RUBBER, FLOATING	
255	3-910-689-01	HOLDER, T.T BASE	
256	3-910-690-01	SHAFT (A), FLOATING RUBBER	
257	3-307-948-21	WASHER, NYLON	
258	3-910-659-01	GEAR (G4), E	
259	3-910-654-01	GEAR (G3), E	
260	3-910-658-01	GEAR (G2), E	
261	3-910-657-01	GEAR (G5), E	
262	3-336-319-01	RING, RETAINING	
263	3-910-655-01	GEAR (G6), E	
264	3-910-721-01	SPRING	
265	3-914-183-01	WASHER, POLYETHYLENE	
266	3-910-682-01	GEAR (G9), E	

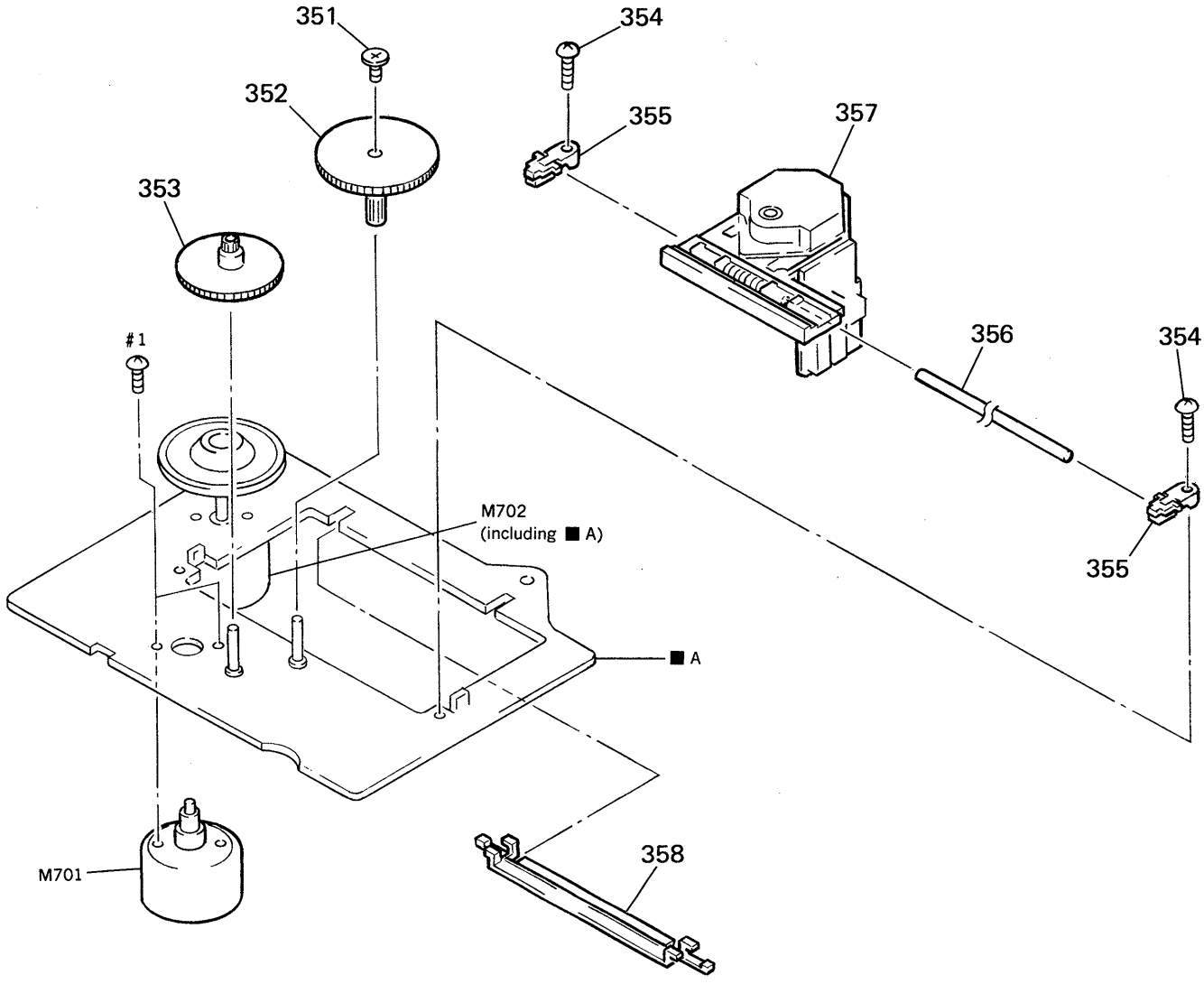
Ref. No.	Part No.	Description	Remark
267	3-910-656-01	GEAR (G8), E	
268	3-910-683-01	HOLDER, DISK	
269	3-910-680-01	CASE, DISK	
270	3-910-698-01	CORE	
271	3-914-536-01	RUBBER, CUSHION	
272	3-910-697-01	PLATE, E CONTROL	
273	3-910-653-01	LEVER, E CONTROL	
274	3-914-181-01	SCREW	
275	3-910-738-01	SCREW (2X2.5), TS SG	
276	3-910-722-01	GEAR (G2) (SPR), E	
277	3-910-742-01	SCREW (1.85X5X0.5), PW CUT	
* 278	3-910-699-01	MOTOR (BKT), E	
* 279	X-3367-906-1	CHASIS ASSY, GEAR	
M401	A-3300-335-A	PRESS FITTING ASSY, MOTOR (A)	
PM401	1-409-541-11	COIL, PG	
S405	1-571-300-31	SWITCH, ROTARY (OPTICAL PIC-UP UP/DOWN)	

3-7. CD MECHASISM SECTION (3)
(MF-D600-111)



Ref. No.	Part No.	Description	Remark
* 301	3-910-663-01	GUIDE (R2)	
* 302	3-910-676-01	GUIDE (L2)	
303	3-910-666-01	STOPPER	
304	3-910-730-01	SENSOR (SPR), E	
305	1-650-725-11	FLEXIBLE (E SENSOR) BOARD	
* 306	1-651-984-11	CONNECTOR BOARD	
307	3-910-668-01	GEAR (B), L	
308	3-910-669-01	GEAR (C), L	
309	3-910-671-01	GEAR (E), L	
310	3-910-670-01	GEAR (D), L	
311	3-910-740-01	SCREW, COLLAR	
* 312	X-3367-907-1	GEAR (BKT) ASSY, L	
M402	A-3300-337-A	PRESS FITTING ASSY, MOTOR (B)	

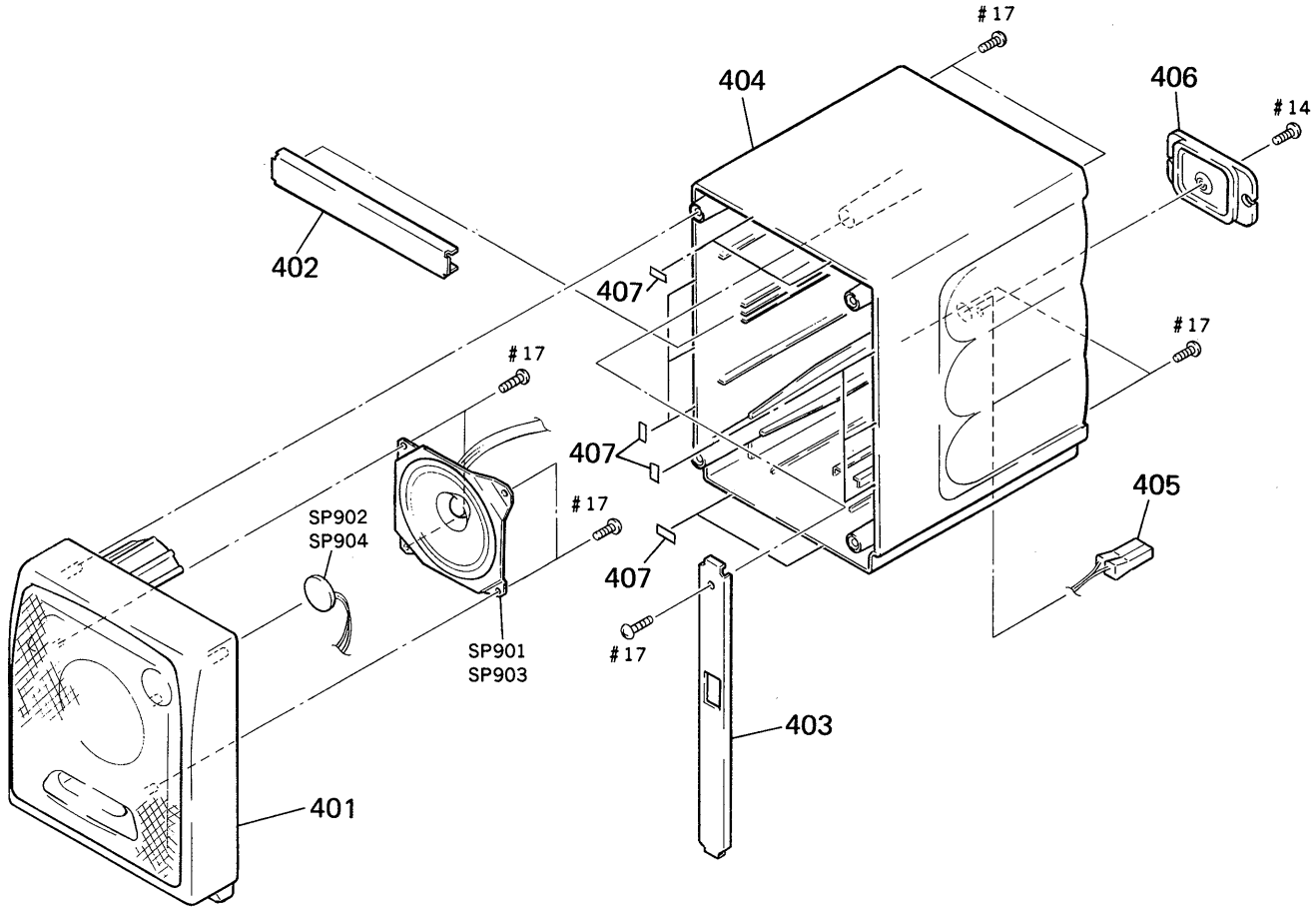
3-8. OPTICAL PICK-UP BLOCK SECTION (KSM-2102BAN)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
351	3-303-809-31	SCREW (M1.7X3.0), SPECIAL HEAD	
352	2-641-404-02	GEAR (A)	
353	2-626-846-01	GEAR (B)	
354	2-641-447-01	SCREW (2.6X8), + STP	
355	2-641-448-02	CLAMP, SHAFT	
* 356	4-910-431-01	SHAFT, SLIDE	
⚠357	8-848-137-11	DEVICE, OPTICAL KSS-210B	
358	2-626-848-01	HOLDER, SLIDE	
M701	X-2625-703-1	GEAR ASSY, MOTOR	
M702	X-2625-704-1	TURNTABLE ASSY	

3-9. SPEAKER SECTION



Ref. No.	Part No.	Description	Remark
401	X-3368-061-1	CABINET (R) SUB ASSY, SPEAKER	
401	X-3368-062-1	CABINET (L) SUB ASSY, SPEAKER	
* 402	3-911-649-01	BRACKET (H), SPK	
* 403	3-911-650-01	BRACKET (V), SPK	
404	3-911-676-01	CABINET (REAR) (SP) (L)	
404	3-911-677-01	CABINET (REAR) (SP) (R)	
405	1-559-620-11	CORD (WITH CONNECTOR)	
406	3-389-090-01	REEL, SPEAKER	
407	3-831-441-XX	CUSHION, SPEAKER	
SP901	1-504-537-11	SPEAKER (10CM)	
SP902	1-529-058-11	BUZZER	
SP903	1-504-537-11	SPEAKER (10CM)	
SP904	1-529-058-11	BUZZER	

SECTION 4
ELECTRICALPARTS LIST

BATTERY (L) **BATTER (S)** **CD**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-651-062-11	BATTERY (L) BOARD			
		**********			
	3-379-748-01	SPRING (-)			
**********					
*	1-651-063-11	BATTERY (S) BOARD			
		**********			
	3-915-417-01	SPRING (S), BATTERY			
**********					
*	A-3269-108-A	CD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C700	1-162-306-11	CERAMIC	0.01uF	20%	16V
C701	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C702-704					
	1-136-165-00	FILM	0.1uF	5%	50V
C705	1-124-907-11	ELECT	10uF	20%	50V
C706	1-130-489-00	MYLAR	0.033uF	5%	50V
C707	1-130-486-00	MYLAR	0.018uF	10%	50V
C708	1-162-199-31	CERAMIC	10PF	5%	50V
C709	1-126-962-11	ELECT	3.3uF	20%	50V
C710	1-130-493-00	MYLAR	0.068uF	5%	50V
C711	1-162-215-31	CERAMIC	47PF	5%	50V
C712	1-162-306-11	CERAMIC	0.01uF	20%	16V
C713	1-130-489-00	MYLAR	0.033uF	5%	50V
C714	1-162-306-11	CERAMIC	0.01uF	20%	16V
C715	1-130-489-00	MYLAR	0.033uF	5%	50V
C716	1-130-483-00	MYLAR	0.01uF	5%	50V
C717	1-124-477-11	ELECT	47uF	20%	25V
C718	1-124-907-11	ELECT	10uF	20%	50V
C721	1-130-491-00	MYLAR	0.047uF	5%	50V
C722	1-161-494-00	CERAMIC	0.022uF		25V
C723	1-130-495-00	MYLAR	0.1uF	5%	50V
C724	1-124-472-11	ELECT	470uF	20%	10V
C725	1-162-197-31	CERAMIC	6.8PF	10%	50V
C726	1-162-294-31	CERAMIC	0.001uF	10%	50V
C727	1-162-306-11	CERAMIC	0.01uF	20%	16V
C728	1-161-772-11	CERAMIC	0.1uF	10%	25V
C729	1-124-477-11	ELECT	47uF	20%	25V
C730	1-126-176-11	ELECT	220uF	20%	10V
C731	1-162-294-31	CERAMIC	0.001uF	10%	50V
C732	1-130-484-00	MYLAR	0.012uF	5%	50V
C734	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C735	1-162-215-31	CERAMIC	47PF	5%	50V
C736	1-124-443-00	ELECT	100uF	20%	10V
C737	1-136-169-00	FILM	0.22uF	5%	50V
C738	1-124-477-11	ELECT	47uF	20%	25V
C740	1-136-165-00	FILM	0.1uF	5%	50V
C741	1-124-477-11	ELECT	47uF	20%	25V
C742	1-130-491-00	MYLAR	0.047uF	5%	50V
C743	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C744	1-162-286-31	CERAMIC	220PF	10%	50V
C745	1-136-169-00	FILM	0.22uF	5%	50V
C746	1-162-306-11	CERAMIC	0.01uF	20%	16V
C747	1-130-481-00	MYLAR	0.0068uF	5%	50V
C749	1-162-282-31	CERAMIC	100PF	10%	50V
C750	1-126-176-11	ELECT	220uF	20%	10V
C752	1-102-942-00	CERAMIC	5PF	0.5PF	50V
C753	1-102-942-00	CERAMIC	5PF	0.5PF	50V
C754	1-136-165-00	FILM	0.1uF	5%	50V
C755	1-162-306-11	CERAMIC	0.01uF	20%	16V
C756	1-162-306-11	CERAMIC	0.01uF	20%	16V
C760	1-162-288-31	CERAMIC	330PF	10%	50V
C761	1-162-217-31	CERAMIC	56PF	5%	50V
C762	1-162-217-31	CERAMIC	56PF	5%	50V
C763	1-162-293-31	CERAMIC	820PF	10%	50V
C764	1-124-927-11	ELECT	4.7uF	20%	100V
C770	1-162-288-31	CERAMIC	330PF	10%	50V
C771	1-162-217-31	CERAMIC	56PF	5%	50V
C772	1-162-217-31	CERAMIC	56PF	5%	50V
C773	1-162-293-31	CERAMIC	820PF	10%	50V
C774	1-124-927-11	ELECT	4.7uF	20%	100V
C775	1-162-282-31	CERAMIC	100PF	10%	50V
C779	1-162-294-31	CERAMIC	0.001uF	10%	50V
C780	1-124-477-11	ELECT	47uF	20%	25V
C781	1-126-176-11	ELECT	220uF	20%	10V
C782	1-161-051-00	CERAMIC	0.01uF	10%	50V
C783	1-162-306-11	CERAMIC	0.01uF	20%	16V

Ref. No.	Part No.	Description			Remark
C784	1-162-306-11	CERAMIC	0.01uF	20%	16V
C785	1-162-282-31	CERAMIC	100PF	10%	50V
C786	1-162-306-11	CERAMIC	0.01uF	20%	16V
C787	1-124-120-11	ELECT	220uF	20%	25V
C788	1-161-772-11	CERAMIC	0.1uF	10%	25V
C789	1-162-306-11	CEAMIC	0.01uF	20%	16V
C799	1-130-495-00	MYLAR	0.1uF	5%	50V
C790	1-124-902-00	ELECT	0.47uF	20%	50V
C792-794					
	1-162-218-31	CERAMIC	62PF	5%	50V
		< CONNECTOR >			
* CN701	1-766-219-11	PIN, CONNECTOR (STRAIGHT TYPE) 8P			
* CN702	1-766-227-11	PIN, CONNECTOR (STRAIGHT TYPE) 8P			
CN703	1-506-485-11	PIN, CONNECTOR 6P			
* CN704	1-566-004-11	PIN, CONNECTOR (PC BOARD) 7P			
* CN706	1-563-612-11	CONNECTOR, FLEXIBLE 9P			
		< DIODE >			
D701	8-719-901-33	DIODE 1SS133			
		< IC >			
IC701	8-752-069-56	IC CXA1782BQ			
IC702	8-752-361-92	IC CXD2517Q			
IC703	8-759-193-03	IC KA9258D			
IC704	8-759-198-93	IC SM5874AM1			
IC705	1-807-547-11	IC KA4558-C			
		< COIL >			
L701	1-410-509-11	INDUCTOR	10uH		
L702	1-410-509-11	INDUCTOR	10uH		
L703	1-410-397-21	INDUCTOR	1.1uH		
L704-708					
	1-410-316-11	INDUCTOR	1uH		
L713	1-410-316-11	INDUCTOR	1uH		
L714	1-410-397-21	INDUCTOR	1.1uH		
L715	1-410-397-21	INDUCTOR	1.1uH		
L716-718					
	1-410-316-11	INDUCTOR	1uH		
L760	1-410-316-11	INDUCTOR	1uH		
L770	1-410-316-11	INDUCTOR	1uH		
		< TRANSISTOR >			
Q701	8-729-801-82	TRANSISTOR	2SB1013-2		
Q702	8-729-900-85	TRANSISTOR	DTC144WS		
Q703	8-729-900-74	TRANSISTOR	DTC143TS		
Q705	8-729-902-80	TRANSISTOR	DTA114YS		
Q760	8-729-900-74	TRANSISTOR	DTC143TS		
Q770	8-729-900-74	TRANSISTOR	DTC143TS		

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R700	1-249-429-11	CARBON	10K	5%	1/4W
R701	1-249-441-11	CARBON	100K	5%	1/4W
R702	1-247-896-11	CARBON	510K	5%	1/4W
R703	1-249-441-11	CARBON	100K	5%	1/4W
R704	1-249-441-11	CARBON	100K	5%	1/4W
R705	1-249-437-11	CARBON	47K	5%	1/4W
R706	1-249-441-11	CARBON	100K	5%	1/4W
R707	1-249-432-11	CARBON	18K	5%	1/4W
R708	1-247-885-00	CARBON	180K	5%	1/4W
R709	1-249-430-11	CARBON	12K	5%	1/4W
R710	1-249-397-11	CARBON	22	5%	1/4W
R711	1-249-417-11	CARBON	1K	5%	1/4W
R714	1-247-883-00	CARBON	150K	5%	1/4W
R715	1-247-806-11	CARBON	91	5%	1/4W
R716	1-249-430-11	CARBON	12K	5%	1/4W
R717	1-249-425-11	CARBON	4.7K	5%	1/4W
R718	1-247-899-11	CARBON	680K	5%	1/4W
R720	1-247-891-00	CARBON	330K	5%	1/4W
R721	1-247-895-00	CARBON	470K	5%	1/4W
R722	1-249-441-11	CARBON	100K	5%	1/4W
R730	1-249-435-11	CARBON	33K	5%	1/4W
R731	1-249-433-11	CARBON	22K	5%	1/4W
R732	1-249-429-11	CARBON	10K	5%	1/4W
R733	1-249-435-11	CARBON	33K	5%	1/4W
R734	1-249-437-11	CARBON	47K	5%	1/4W
R735	1-249-422-11	CARBON	2.7K	5%	1/4W
R740	1-247-881-00	CARBON	120K	5%	1/4W
R741	1-249-423-11	CARBON	3.3K	5%	1/4W
R742	1-249-423-11	CARBON	3.3K	5%	1/4W
R743	1-247-903-00	CARBON	1M	5%	1/4W
R744	1-247-887-00	CARBON	220K	5%	1/4W
R745	1-247-856-00	CARBON	11K	5%	1/4W
R746	1-249-437-11	CARBON	47K	5%	1/4W
R747	1-249-417-11	CARBON	1K	5%	1/4W
R748	1-249-429-11	CARBON	10K	5%	1/4W
R749	1-249-429-11	CARBON	10K	5%	1/4W
R750	1-249-417-11	CARBON	1K	5%	1/4W
R751-753					
	1-249-429-11	CARBON	10K	5%	1/4W
R760	1-249-429-11	CARBON	10K	5%	1/4W
R761	1-249-429-11	CARBON	10K	5%	1/4W
R762	1-247-870-11	CARBON	43K	5%	1/4W
R763	1-247-870-11	CARBON	43K	5%	1/4W
R764	1-249-434-11	CARBON	27K	5%	1/4W
R765	1-249-435-11	CARBON	33K	5%	1/4W
R766	1-249-417-11	CARBON	1K	5%	1/4W
R770	1-249-429-11	CARBON	10K	5%	1/4W

CD | CD MOTOR | CONTROL

Ref. No.	Part No.	Description			Remark
R771	1-249-429-11	CARBON	10K	5%	1/4W
R772	1-247-870-11	CARBON	43K	5%	1/4W
R773	1-247-870-11	CARBON	43K	5%	1/4W
R774	1-249-434-11	CARBON	27K	5%	1/4W
R775	1-249-435-11	CARBON	33K	5%	1/4W
R776	1-249-417-11	CARBON	1K	5%	1/4W
R780	1-247-807-31	CARBON	100	5%	1/4W
R781	1-249-429-11	CARBON	10K	5%	1/4W
R782	1-249-431-11	CARBON	15K	5%	1/4W
R790	1-249-433-11	CARBON	22K	5%	1/4W
⚠R791	1-212-861-11	FUSIBLE	15	5%	1/4W
R792	1-249-441-11	CARBON	100K	5%	1/4W
		< VARIABLE RESISTOR >			
RV701	1-237-288-11	RES, ADJ, CARBON 47K			
RV702	1-230-497-11	RES, ADJ, CARBON 22K			
RV703	1-237-288-11	RES, ADJ, CARBON 47K			
RV704	1-230-497-11	RES, ADJ, CARBON 22K			
		< VIBRATOR >			
X701	1-579-345-11	VIBRATOR, CERAMIC (16.93MHz)			
**********					
*	1-651-982-11	CD MOTOR BOARD			
		**********			
		< CONNECTOR >			
* CN705	1-566-003-11	PIN, CONNECTOR (PC BOARD) 6P			
		< SWITCH >			
S701	1-571-936-11	SWITCH, LEAF (LIMIT)			
**********					
*	A-3269-103-A	CONTROL BOARD, COMPLETE			
		**********			
*	3-911-653-01	ILLUMINATOR			
	3-911-658-01	HOLDER, LCD			
	4-931-757-41	SCREW (DIA.2.6X10) (IT3B)			
		< CAPACITOR >			
C801-804					
	1-163-033-11	CERAMIC CHIP	0.022uF		50V
C805	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C806	1-126-101-11	ELECT	100uF	20%	16V
C809	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C810	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C811	1-124-907-11	ELECT	10uF	20%	50V
C812	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C813	1-124-604-00	ELECT	330uF	20%	10V

Ref. No.	Part No.	Description			Remark
C814	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C816	1-126-301-11	ELECT	1uF	20%	50V
C819	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C820	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C821-823					
	1-163-009-11	CERAMIC	0.001uF	10%	50V
C824	1-164-232-11	CERAMIC	0.001uF	10%	100V
C825	1-104-905-11	DOUBLE LAYERS	0.22F		5.5V
C826	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C827	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C834-838					
	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C841	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C843-846					
	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN801	1-563-602-11	CONNECTOR, FLEXIBLE 25P			
CN802	1-563-586-11	CONNECTOR, FLEXIBLE 9P			
CN803	1-563-595-11	CONNECTOR, FLEXIBLE 18P			
		< DIODE >			
D801	8-719-047-09	LED SLR-34DU70F085 (1)			
D802	8-719-047-08	LED SLR-34DU70F107 (2)			
D803	8-719-047-83	LED SLR-34DU70F124 (3)			
D804	8-719-042-85	LED SLR-34DU70F130 (4)			
D805	8-719-042-85	LED SLR-34DU70F130 (5)			
D806	8-719-042-85	LED SLR-34DU70F130 (6)			
D807	8-719-042-85	LED SLR-34DU70F130 (SINGLE OPERATION)			
D808	8-719-027-50	DIODE MA142WK			
D809	8-719-987-04	LED SLR34VRF39 (FM STEREO)			
D811	8-719-987-04	LED SLR34VRF39 (OPR/BATT)			
D812	8-719-106-23	DIODE RD7.5M-B2			
D813	8-719-106-23	DIODE RD7.5M-B2			
D814	8-719-027-50	DIODE MA142WK			
D817	8-719-027-50	DIODE MA142WK			
		< IC >			
IC801	8-759-267-46	IC MSM65355-013GS-V1K2			
IC802	8-759-153-90	IC uPD7225GB-3B7			
IC805	8-741-810-09	IC SBX1810-09			
IC806	8-759-249-81	IC S-806J			
IC807	8-759-802-32	IC LB1649			
		< COIL >			
L801	1-410-393-11	INDUCTOR 100uH			
L802	1-410-658-31	INDUCTOR 220uH			

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-810-435-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q801	8-729-805-94	TRANSISTOR 2SC4047			
Q802	8-729-805-94	TRANSISTOR 2SC4047			
Q803	8-729-805-94	TRANSISTOR 2SC4047			
Q804	8-729-805-94	TRANSISTOR 2SC4047			
Q805	8-729-805-94	TRANSISTOR 2SC4047			
Q806	8-729-805-94	TRANSISTOR 2SC4047			
Q807	8-729-805-94	TRANSISTOR 2SC4047			
Q808	8-729-805-62	TRANSISTOR 2SA1502			
Q809	8-729-805-94	TRANSISTOR 2SC4047			
Q810	8-729-801-84	TRANSISTOR 2SB1013-4			
		< RESISTOR >			
R801-811					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R812	1-216-037-00	METAL CHIP	330	5%	1/10W
R813	1-216-073-00	METAL CHIP	10K	5%	1/10W
R814-819					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R820-822					
	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R823-825					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R826	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R827	1-216-049-00	METAL CHIP	1K	5%	1/10W
R828	1-216-037-00	METAL CHIP	10K	5%	1/10W
R829-834					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R836	1-216-089-00	METAL CHIP	47K	5%	1/10W
R837-840					
	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R841-844					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R845	1-216-073-00	METAL CHIP	10K	5%	1/10W
R846	1-216-073-00	METAL CHIP	10K	5%	1/10W
R847-850					
	1-216-045-00	METAL CHIP	680	5%	1/10W
R851	1-216-047-00	METAL CHIP	820	5%	1/10W
R852	1-216-047-00	METAL CHIP	820	5%	1/10W
R854	1-216-047-00	METAL CHIP	820	5%	1/10W
R855	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R856	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R858	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R859	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R860	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R862	1-216-055-00	METAL CHIP	1.8K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R863	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R865	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R866	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R867	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R869	1-216-073-00	METAL CHIP	10K	5%	1/10W
R870	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R871	1-216-314-11	METAL CHIP	9.1	5%	1/10W
R873	1-216-073-00	METAL CHIP	10K	5%	1/10W
R874	1-216-073-00	METAL CHIP	10K	5%	1/10W
R875-881					
	1-216-039-00	METAL CHIP	390	5%	1/10W
R882	1-216-109-00	METAL CHIP	330K	5%	1/10W
R883	1-216-041-00	METAL CHIP	470	5%	1/10W
R884-886					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R887	1-216-049-00	METAL CHIP	1K	5%	1/10W
R888	1-216-073-00	METAL CHIP	10K	5%	1/10W
R889	1-216-073-00	METAL CHIP	10K	5%	1/10W
R890-899					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R945-949					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R950-954					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R955	1-216-081-00	METAL CHIP	22K	5%	1/10W
R956-959					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R960-965					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R966	1-216-049-00	METAL CHIP	1K	5%	1/10W
R967	1-216-089-00	METAL CHIP	47K	5%	1/10W
R968	1-216-097-00	METAL CHIP	100K	5%	1/10W
R969	1-216-049-00	METAL CHIP	1K	5%	1/10W
R970	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R972	1-216-035-00	METAL CHIP	270	5%	1/10W
R974-977					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R978	1-216-097-00	METAL CHIP	100K	5%	1/10W
R979	1-216-089-00	METAL CHIP	47K	5%	1/10W
R980-984					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R985	1-216-025-00	METAL CHIP	100	5%	1/10W
R986-999					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< SWITCH >			
S801	1-572-199-11	SWITCH, KEY BOARD (POWER)			
S802	1-572-199-11	SWITCH, KEY BOARD (■)			
S803	1-572-199-11	SWITCH, KEY BOARD (⏏ (OPEN/CLOSE))			
S804	1-572-199-11	SWITCH, KEY BOARD (SINGLE OPERATION)			
S805	1-572-199-11	SWITCH, KEY BOARD (CD)			

CONTROL | **DISC SENSOR (A)** | **DISC SENSOR (B)** | **FLEXIBLE (E SENSOR)** | **FLEXIBLE (L SENSOR)** | **H/P** | **LAMP**

Ref. No.	Part No.	Description	Remark
S806	1-572-199-11	SWITCH, KEY BOARD (▷II)	
S808	1-572-199-11	SWITCH, KEY BOARD (1 (DISC SELECTION))	
S809	1-572-199-11	SWITCH, KEY BOARD (RADIO)	
S810	1-572-199-11	SWITCH, KEY BOARD (⏮)	
S812	1-572-199-11	SWITCH, KEY BOARD (2 (DISC SELECTION))	
S813	1-572-199-11	SWITCH, KEY BOARD (TAPE)	
S814	1-572-199-11	SWITCH, KEY BOARD (⏭)	
S816	1-572-199-11	SWITCH, KEY BOARD (3 (DISC SELECTION))	
S820	1-572-199-11	SWITCH, KEY BOARD (4 (DISC SELECTION))	
S821	1-572-199-11	SWITCH, KEY BOARD (+ (VOLUME))	
S824	1-572-199-11	SWITCH, KEY BOARD (5 (DISC SELECTION))	
S825	1-572-199-11	SWITCH, KEY BOARD (- (VOLUME))	
S828	1-572-199-11	SWITCH, KEY BOARD (6 (DISC SELECTION))	
		< VIBRATOR >	
X801	1-567-775-11	VIBRATOR, CERAMIC (4.19MHz)	
X802	1-760-305-11	VIBRATOR, CRYSTAL (32.768kHz)	
**********			
*	1-651-983-11	DISC SENSOR (A) BOARD	
		**********	
		< DIODE >	
D401	8-719-938-07	LED GL480	
		< SWITCH >	
S401	1-692-862-11	SWITCH, PUSH (1 KEY) (DISC ERROR)	
**********			
*	1-652-093-11	DISC SENSOR (B) BOARD	
		**********	
		< PHOTO SENSOR >	
Q401	8-729-903-81	PHOTO SENSOR PT480	
**********			
*	1-650-725-11	FLEXIBLE (E SENSOR) BOARD	
		**********	
		< PHOTO INTERRUPTER >	
PH402	8-749-925-01	PHOTO INTERRUPTER SPO-235-18	
		< SWITCH >	
S402	1-692-863-11	SWITCH, PUSH (1KEY) (STOCK)	
S403	1-692-193-11	SWITCH, PUSH (1KEY) (SINGLE PLAY)	
**********			

Ref. No.	Part No.	Description	Remark
	1-650-726-11	FLEXIBLE (L SENSOR) BOARD	
		**********	
		< PHOTO INTERRUPTER >	
PH401	8-749-925-01	PHOTO INTERRUPTER SPI-235-18	
**********			
*	1-651-061-11	H/P BOARD	
		*********	
		< CONNECTOR >	
* CN305	1-565-731-11	PLUG, CONNECTOR (2.5MM) 5P	
		< JACK >	
J302	1-568-267-11	JACK (PHONES)	
		< COIL >	
L101	1-414-142-11	INDUCTOR 1uH	
L201	1-414-142-11	INDUCTOR 1uH	
L306	1-410-509-11	INDUCTOR 10uH	
		< RESISTOR >	
R124	1-249-404-00	CARBON 82 5% 1/4W F	
R224	1-249-404-00	CARBON 82 5% 1/4W F	
**********			
*	1-651-072-11	LAMP BOARD	
		**********	
		< CONNECTOR >	
* CN805	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P	
		< PILOT LAMP >	
LP801-804			
	1-518-688-11	LAMP, PILOT	
**********			

Ref. No.	Part No.	Description			Remark
*	A-3269-112-A	MAIN BOARD, COMPLETE			
		**********			
	3-911-621-01	GEAR, PVC			
	3-911-622-01	KNOB, BAND			
	7-621-770-87	SCREW +B 2.6X5			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			
		< CAPACITOR >			
C1	1-102-958-00	CERAMIC	20PF	5%	50V
C2	1-102-960-00	CERAMIC	24PF	5%	50V
C3	1-162-191-31	CERAMIC	2.2PF	10%	50V
C4	1-162-197-31	CERAMIC	6.8PF	10%	50V
C5	1-104-792-51	ELECT	33uF	20%	16V
C6	1-161-379-00	CERAMIC	0.01uF	20%	25V
C7	1-161-379-00	CERAMIC	0.01uF	20%	25V
C10	1-124-477-11	ELECT	47uF	20%	25V
C11	1-124-925-11	ELECT	2.2uF	20%	100V
C12	1-124-477-11	ELECT	47uF	20%	25V
C13	1-161-379-00	CERAMIC	0.01uF	20%	25V
C14	1-161-379-00	CERAMIC	0.01uF	20%	25V
C15	1-124-903-11	ELECT	1uF	20%	50V
C16	1-124-927-11	ELECT	4.7uF	20%	100V
C17	1-161-053-00	CERAMIC	0.015uF	10%	50V
C18	1-161-053-00	CERAMIC	0.015uF	10%	50V
C19	1-124-903-11	ELECT	1uF	20%	50V
C20	1-124-902-00	ELECT	0.47uF	20%	50V
C21	1-124-927-11	ELECT	4.7uF	20%	100V
C22	1-126-101-11	ELECT	100uF	20%	16V
C23	1-124-902-00	ELECT	0.47uF	20%	50V
C24	1-124-902-00	ELECT	0.47uF	20%	50V
C25	1-162-189-31	CERAMIC	1.5PF	20%	50V
C26	1-161-379-00	CERAMIC	0.01uF	20%	25V
C101	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C102	1-161-020-11	CERAMIC	0.039uF	10%	25V
C103	1-124-477-11	ELECT	47uF	20%	25V
C104	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C105	1-124-902-00	ELECT	0.47uF	20%	50V
C106	1-124-927-11	ELECT	4.7uF	20%	100V
C107	1-124-907-11	ELECT	10uF	20%	50V
C108	1-124-903-11	ELECT	1uF	20%	50V
C109	1-161-772-11	CERAMIC	0.1uF	10%	25V
C111	1-161-772-11	CERAMIC	0.1uF	10%	25V
C112	1-162-282-31	CERAMIC	100PF	10%	50V
C113	1-124-927-11	ELECT	4.7uF	20%	100V
C114	1-162-290-31	CERAMIC	470PF	10%	50V
C115	1-124-477-11	ELECT	47uF	20%	25V
C116	1-126-101-11	ELECT	100uF	20%	16V
C117	1-124-473-11	ELECT	1000uF	20%	10V

Ref. No.	Part No.	Description			Remark
C118	1-124-907-11	ELECT	10uF	20%	50V
C119	1-136-165-00	FILM	0.1uF	5%	50V
C122	1-124-927-11	ELECT	4.7uF	20%	100V
C123	1-104-792-51	ELECT	33uF	20%	16V
C124	1-124-464-11	ELECT	0.22uF	20%	50V
C151-153					
	1-162-282-31	CERAMIC	100PF	10%	50V
C201	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C202	1-161-020-11	CERAMIC	0.039uF	10%	25V
C203	1-124-477-11	ELECT	47uF	20%	25V
C204	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C205	1-124-902-00	ELECT	0.47uF	20%	50V
C206	1-124-927-11	ELECT	4.7uF	20%	100V
C207	1-124-907-11	ELECT	10uF	20%	50V
C208	1-124-903-11	ELECT	1uF	20%	50V
C209	1-161-772-11	CERAMIC	0.1uF	10%	25V
C211	1-161-772-11	CERAMIC	0.1uF	10%	25V
C212	1-162-282-31	CERAMIC	100PF	10%	50V
C213	1-124-927-11	ELECT	4.7uF	20%	100V
C214	1-162-290-31	CERAMIC	470PF	10%	50V
C215	1-124-477-11	ELECT	47uF	20%	25V
C216	1-126-101-11	ELECT	100uF	20%	16V
C217	1-124-473-11	ELECT	1000uF	20%	10V
C218	1-124-907-11	ELECT	10uF	20%	50V
C219	1-136-165-00	FILM	0.1uF	5%	50V
C222	1-124-927-11	ELECT	4.7uF	20%	100V
C223	1-104-792-51	ELECT	33uF	20%	16V
C224	1-124-464-11	ELECT	0.22uF	20%	50V
C251-253					
	1-162-282-31	CERAMIC	100PF	10%	50V
C301	1-124-903-11	ELECT	1uF	20%	50V
C302	1-161-494-00	CERAMIC	0.022uF		25V
C303	1-126-176-11	ELECT	220uF	20%	10V
C304	1-124-477-11	ELECT	47uF	20%	25V
C305	1-162-286-31	CERAMIC	220PF	10%	50V
C306	1-126-101-11	ELECT	100uF	20%	16V
C307	1-124-907-11	ELECT	10uF	20%	50V
C308	1-124-907-11	ELECT	10uF	20%	50V
C309	1-126-176-11	ELECT	220uF	20%	10V
C311	1-124-907-11	ELECT	10uF	20%	50V
C313	1-130-470-00	MYLAR	820PF	5%	50V
C314	1-130-467-00	MYLAR	470PF	5%	50V
C316	1-130-478-00	MYLAR	0.0039uF	5%	50V
C317	1-124-477-11	ELECT	47uF	20%	25V
C319	1-130-473-00	MYLAR	0.0015uF	5%	50V
C321	1-124-927-11	ELECT	4.7uF	20%	100V
C323	1-126-101-11	ELECT	100uF	20%	16V
C324	1-126-101-11	ELECT	100uF	20%	16V
C325	1-124-902-00	ELECT	0.47uF	20%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C327	1-126-101-11	ELECT	100uF	20%	16V
C328	1-126-101-11	ELECT	100uF	20%	16V
C329	1-124-907-11	ELECT	10uF	20%	50V
C330	1-124-477-11	ELECT	47uF	20%	25V
C331	1-124-120-11	ELECT	220uF	20%	25V
C332-334					
	1-124-907-11	ELECT	10uF	20%	50V
C335	1-126-233-11	ELECT	22uF	20%	50V
C336	1-124-557-11	ELECT	1000uF	20%	25V
C337	1-126-101-11	ELECT	100uF	20%	16V
C338	1-124-477-11	ELECT	47uF	20%	25V
C339	1-124-907-11	ELECT	10uF	20%	50V
C345	1-124-925-11	ELECT	2.2uF	20%	100V
C346	1-124-925-11	ELECT	2.2uF	20%	100V
C349	1-124-477-11	ELECT	47uF	20%	25V
C351	1-162-282-31	CERAMIC	100PF	10%	50V
C352	1-124-925-11	ELECT	2.2uF	20%	100V
C353-355					
	1-162-282-31	CERAMIC	100PF	10%	50V
C356	1-124-925-11	ELECT	2.2uF	20%	100V
C357	1-162-282-31	CERAMIC	100PF	10%	50V
C358	1-162-282-31	CERAMIC	100PF	10%	50V
C359	1-124-907-11	ELECT	10uF	20%	50V
C360	1-126-101-11	ELECT	100uF	20%	16V
		< FILTER >			
CF1-3					
	1-577-327-81	FILTER, CERAMIC			
		< CONNECTOR >			
* CN301	1-566-779-11	PIN, CONNECTOR (PC BOARD) 4P			
* CN302	1-506-989-11	PIN, CONNECTOR (PC BOARD) 7P			
CN303	1-569-748-11	PIN, CONNECTOR (PC BOARD) 5P			
CN304	1-565-731-11	PLUG, CONNECTOR (2.5MM) 5P			
CN306	1-563-602-11	CONNECTOR, FLEXIBLE 25P			
		< COMPOSITION CIRCUIT BLOCK >			
CP1	1-239-249-11	ENCAPSULATED COMPONENT			
		< VARIABLE CAPACITOR >			
CV1-4 CT1-4	1-151-624-11	CAP, VAR (TUNING)			
		< DIODE >			
D1	8-719-901-33	DIODE	1SS133T		
D2	8-719-901-33	DIODE	1SS133T		
D101	8-719-901-33	DIODE	1SS133		
D201	8-719-901-33	DIODE	1SS133		
D301	8-719-200-02	DIODE	10E2		

Ref. No.	Part No.	Description		Remark
D302	8-719-200-02	DIODE	10E2	
D303	8-719-921-88	DIODE	MTZJ-13B	
D304	8-719-901-33	DIODE	1SS133	
D305	8-719-901-33	DIODE	1SS133	
D306	8-719-901-33	DIODE	1SS133	
D308	8-719-901-33	DIODE	1SS133	
D309	8-719-901-33	DIODE	1SS133	
D310	8-719-901-33	DIODE	1SS133	
D311	8-719-901-33	DIODE	1SS133	
D312	8-719-901-33	DIODE	1SS133	
D313	8-719-901-33	DIODE	1SS133	
D315	8-719-901-33	DIODE	1SS133	
D316	8-719-901-33	DIODE	1SS133	
D320	8-719-901-33	DIODE	1SS133	
D321	8-719-901-33	DIODE	1SS133	
		< FILTER >		
FL1	1-236-022-11	FILTER, BAND PASS		
		< IC >		
IC1	8-752-050-20	IC	CXA1238S	
IC301	8-759-264-71	IC	TA2068N	
IC302	1-807-547-11	IC	KA4558-C	
IC303	8-752-067-34	IC	CXA1352AS	
IC305	8-759-820-22	IC	LA4597	
IC306	8-759-080-77	IC	BA3933	
IC307	8-759-095-60	IC	S-81250PG	
IC308	1-809-920-11	IC	BA7755A	
IC309	8-759-249-81	IC	S-806J	
IC310	8-759-179-74	IC	M62354P	
		< JACK >		
J301	1-750-184-11	JACK, MICROPHONE (MIX MIC)		
J303	1-537-114-11	TERMINAL BOARD (SPEAKER OUTPUT)		
		< COIL >		
* L1	1-428-030-11	COIL, AIR-CORE		
* L2	1-422-354-11	COIL, AIR-CORE		
L3	1-402-553-11	ANTENNA, FERRITE-ROD (MW)		
L301	1-414-142-11	INDUCTOR	1uH	
L302	1-414-142-11	INDUCTOR	1uH	
		< TRANSISTOR >		
Q101	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q102	8-729-806-30	TRANSISTOR	2SC4048	
Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q202	8-729-806-30	TRANSISTOR	2SC4048	
Q301	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q302	8-729-801-84	TRANSISTOR	2SB1013-4	

Ref. No.	Part No.	Description	Remark
Q303	8-729-806-30	TRANSISTOR 2SC4048	
Q304	8-729-806-30	TRANSISTOR 2SC4048	
Q305	8-729-801-84	TRANSISTOR 2SB1013-4	
Q306	8-729-902-80	TRANSISTOR DTA114YS	
Q307	8-729-806-30	TRANSISTOR 2SC4048	
Q308	8-729-902-80	TRANSISTOR DTA114YS	
Q309	8-729-806-30	TRANSISTOR 2SC4048	
Q310	1-807-545-11	TRANSISTOR KSC1008-Y	
Q311	8-729-801-84	TRANSISTOR 2SB1013-4	
Q312	8-729-806-30	TRANSISTOR 2SC4048	
Q313	8-729-806-30	TRANSISTOR 2SC4048	
Q314	8-729-902-80	TRANSISTOR DTA114YS	
Q317	8-729-806-30	TRANSISTOR 2SC4048	
Q320	8-729-902-80	TRANSISTOR DTA114YS	
Q321	8-729-806-30	TRANSISTOR 2SC4048	
Q322	8-729-801-84	TRANSISTOR 2SB1013-4	
Q323	8-729-806-30	TRANSISTOR 2SC4048	
Q330	8-729-806-30	TRANSISTOR 2SC4048	

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R1	1-249-441-11	CARBON	100K	5%	1/4W
R2	1-249-421-11	CARBON	2.2K	5%	1/4W
R4	1-247-811-31	CARBON	150	5%	1/4W
R5	1-247-807-31	CARBON	100	5%	1/4W
R6	1-249-427-11	CARBON	6.8K	5%	1/4W
R7	1-249-427-11	CARBON	6.8K	5%	1/4W
R8	1-247-887-00	CARBON	220K	5%	1/4W
R9	1-247-887-00	CARBON	220K	5%	1/4W
R10	1-249-421-11	CARBON	2.2K	5%	1/4W
R11	1-249-429-11	CARBON	10K	5%	1/4W
R12	1-249-409-11	CARBON	220	5%	1/4W
R16	1-249-397-11	CARBON	22	5%	1/4W
R17	1-249-402-11	CARBON	56	5%	1/4W
R40	1-249-423-11	CARBON	3.3K	5%	1/4W
R101	1-247-860-11	CARBON	16K	5%	1/4W
R102	1-249-403-11	CARBON	68	5%	1/4W
R103	1-249-440-11	CARBON	82K	5%	1/4W
R104	1-249-423-11	CARBON	3.3K	5%	1/4W
R105	1-249-430-11	CARBON	12K	5%	1/4W
R108	1-249-435-11	CARBON	33K	5%	1/4W
R109	1-249-419-11	CARBON	1.5K	5%	1/4W
R110	1-249-421-11	CARBON	2.2K	5%	1/4W
R111	1-247-895-00	CARBON	470K	5%	1/4W
R112	1-247-895-00	CARBON	470K	5%	1/4W
R113	1-249-429-11	CARBON	10K	5%	1/4W
R114	1-249-418-11	CARBON	1.2K	5%	1/4W
R115	1-249-417-11	CARBON	1K	5%	1/4W
R116	1-249-417-11	CARBON	1K	5%	1/4W
R118	1-249-430-11	CARBON	12K	5%	1/4W
R119	1-249-423-11	CARBON	3.3K	5%	1/4W
R129	1-249-429-11	CARBON	10K	5%	1/4W
R201	1-247-860-11	CARBON	16K	5%	1/4W
R202	1-249-403-11	CARBON	68	5%	1/4W
R203	1-249-440-11	CARBON	82K	5%	1/4W
R204	1-249-423-11	CARBON	3.3K	5%	1/4W
R205	1-249-430-11	CARBON	12K	5%	1/4W
R208	1-249-435-11	CARBON	33K	5%	1/4W
R209	1-249-419-11	CARBON	1.5K	5%	1/4W
R210	1-249-421-11	CARBON	2.2K	5%	1/4W
R211	1-247-895-00	CARBON	470K	5%	1/4W
R212	1-247-895-00	CARBON	470K	5%	1/4W
R213	1-249-429-11	CARBON	10K	5%	1/4W
R214	1-249-418-11	CARBON	1.2K	5%	1/4W
R215	1-249-417-11	CARBON	1K	5%	1/4W
R216	1-249-417-11	CARBON	1K	5%	1/4W
R218	1-249-430-11	CARBON	12K	5%	1/4W
R219	1-249-423-11	CARBON	3.3K	5%	1/4W
R229	1-249-429-11	CARBON	10K	5%	1/4W
R301	1-249-417-11	CARBON	1K	5%	1/4W
R302	1-249-429-11	CARBON	10K	5%	1/4W
R303	1-247-903-00	CARBON	1M	5%	1/4W
R304	1-249-397-11	CARBON	22	5%	1/4W
R305	1-249-435-11	CARBON	33K	5%	1/4W
R307	1-249-389-11	CARBON	4.7	5%	1/4W
R308	1-247-811-31	CARBON	150	5%	1/4W
R309	1-247-884-11	CARBON	160K	5%	1/4W
R310	1-249-437-11	CARBON	47K	5%	1/4W
R311	1-249-417-11	CARBON	1K	5%	1/4W
R312	1-249-417-11	CARBON	1K	5%	1/4W
R313	1-249-429-11	CARBON	10K	5%	1/4W
R314	1-249-429-11	CARBON	10K	5%	1/4W
R315	1-247-811-31	CARBON	150	5%	1/4W
R316	1-247-807-31	CARBON	100	5%	1/4W
R318	1-249-429-11	CARBON	10K	5%	1/4W
R319	1-249-413-11	CARBON	470	5%	1/4W
R320	1-247-903-00	CARBON	1M	5%	1/4W
R321	1-249-431-11	CARBON	15K	5%	1/4W
R322	1-249-431-11	CARBON	15K	5%	1/4W
R325	1-249-409-11	CARBON	220	5%	1/4W
R326	1-249-429-11	CARBON	10K	5%	1/4W
R327	1-249-417-11	CARBON	1K	5%	1/4W
R328	1-249-441-11	CARBON	100K	5%	1/4W
R329	1-249-427-11	CARBON	6.8K	5%	1/4W
R335	1-249-437-11	CARBON	47K	5%	1/4W
R338	1-249-421-11	CARBON	2.2K	5%	1/4W
R342	1-249-433-11	CARBON	22K	5%	1/4W
R343	1-249-421-11	CARBON	2.2K	5%	1/4W
R345	1-249-429-11	CARBON	10K	5%	1/4W

MAIN **MD** **POWER** **PROTECT** **RETAINER**

Ref. No.	Part No.	Description			Remark
R346	1-249-440-11	CARBON	82K	5%	1/4W
R348	1-249-418-11	CARBON	1.2K	5%	1/4W
R349	1-249-417-11	CARBON	1K	5%	1/4W
R356	1-247-811-31	CARBON	150	5%	1/4W
R357-359					
	1-249-421-11	CARBON	2.2K	5%	1/4W
R360	1-249-417-11	CARBON	1K	5%	1/4W
R362	1-249-421-11	CARBON	2.2K	5%	1/4W
R363	1-249-417-11	CARBON	1K	5%	1/4W
R364	1-249-417-11	CARBON	1K	5%	1/4W
R366	1-249-423-11	CARBON	3.3K	5%	1/4W
R367	1-249-430-11	CARBON	12K	5%	1/4W
R369	1-247-807-11	CARBON	100	5%	1/4W
		< VARIABLE RESISTOR >			
RV1	1-241-765-11	RES, ADJ, CARBON 22K			
		< SWITCH >			
S1	1-692-252-11	SWITCH, LEVER SLIDE (BAND)			
S301	1-571-307-11	SWITCH, SLIDE (ISS)			
S302	1-692-977-11	SWITCH, KEY BOARD (RESET)			
		< TRANSFORMER >			
T1	1-406-040-00	COIL (OSC)			
T301	1-433-268-00	TRANSFORMER, BIAS OSCILLATOR			
**********					
*	1-651-064-11	MD BOARD			
		********			
		< CAPACITOR >			
C601	1-136-169-00	FILM	0.22uF	5%	50V
C602	1-136-169-00	FILM	0.22uF	5%	50V
		< CONNECTOR >			
* CN602	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
		< TRANSISTOR >			
Q601	8-729-902-80	TRANSISTOR DTA114YS			
Q602	8-729-806-30	TRANSISTOR 2SC4048			
		< RESISTOR >			
R601-604					
	1-249-429-11	CARBON	10K	5%	1/4W
		< SWITCH >			
S601	1-571-890-11	SWITCH, LEAF (PLAY)			
S602	1-571-890-11	SWITCH, LEAF (REC)			

Ref. No.	Part No.	Description			Remark
*	1-651-069-11	POWER BOARD			
		**********			
	1-533-233-11	HOLDER, FUSE			
	3-379-748-01	SPRING (-)			
		< CAPACITOR >			
C901-904					
	1-101-005-00	CERAMIC	22000PF		50V
C905	1-124-771-00	ELECT	6800uF	20%	25V
C906	1-136-169-00	FILM	0.22uF	5%	50V
C907	1-136-165-00	FILM	0.1uF	5%	50V
		< CONNECTOR >			
CN901	1-573-457-11	PLUG, CONNECTOR 6P			
		< DIODE >			
D901	8-719-046-47	DIODE 1N5401TM			
D902	8-719-046-47	DIODE 1N5401TM			
D903	8-719-046-47	DIODE 1N5401TM			
D904	8-719-046-47	DIODE 1N5401TM			
D905	8-719-901-33	DIODE 1SS133			
D906	8-719-901-33	DIODE 1SS133			
		< FUSE >			
⚠F901	1-532-745-11	FUSE (3.15A/125V)			
		< IC >			
IC901	8-759-095-60	IC S-81250PG			
		< JACK >			
⚠J901	1-540-009-11	INLET, AC (~ AC IN)			
		< LINE FILTER >			
⚠LF901	1-424-150-11	TRANSFORMER, LINE FILTER			
		< RESISTOR >			
R901	1-247-895-00	CARBON	470K	5%	1/4W
R902	1-247-887-00	CARBON	220K	5%	1/4W
**********					
*	1-652-927-11	PROTECT BOARD			
		**********			
**********					
*	1-651-066-11	RETAINER BOARD			
		**********			
**********					

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
*	1-651-070-11	S. W BOARD			
		*********			
		< CAPACITOR >			
C807	1-162-294-31	CERAMIC	0.001uF	10%	50V
C815	1-162-294-21	CERAMIC	0.001uF	10%	50V
C817	1-162-294-21	CERAMIC	0.001uF	10%	50V
C818	1-162-294-21	CERAMIC	0.001uF	10%	50V
C828-832	1-162-294-21	CERAMIC	0.001uF	10%	50V
		< CONNECTOR >			
* CN804	1-566-002-11	PIN, CONNECTOR (PC BOARD) 5P			
		< RESISTOR >			
R835	1-247-854-11	CARBON	9.1k	5%	1/4W
R853	1-249-416-11	CARBON	820	5%	1/4W
R857	1-249-418-11	CARBON	1.2K	5%	1/4W
R861	1-249-420-11	CARBON	1.8K	5%	1/4W
R864	1-249-423-11	CARBON	3.3K	5%	1/4W
R868	1-249-427-11	CARBON	6.8K	5%	1/4W
R872	1-249-432-11	CARBON	18K	5%	1/4W
		< SWITCH >			
S807	1-572-199-11	SWITCH, KEY BOARD (CONTINUE (ONE TOUCH RELAY PLAY))			
S811	1-572-199-11	SWITCH, KEY BOARD (SHUFFLE (ONE TOUCH CD RELAY PLAY))			
S815	1-572-199-11	SWITCH, KEY BOARD (SOUND)			
S818	1-572-199-11	SWITCH, KEY BOARD (PLAY MODE)			
S822	1-572-199-11	SWITCH, KEY BOARD (DISC MODE)			
S826	1-572-199-11	SWITCH, KEY BOARD (ENTER)			
S829	1-572-199-11	SWITCH, KEY BOARD (MEGA BASS)			
S830	1-572-199-11	SWITCH, KEY BOARD (DISPLAY)			

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
57	1-765-396-11	WIRE, PARALLEL (FFC) (9 CORE)	
58	1-765-397-11	WIRE, PARALLEL (FFC) (18 CORE)	
59	1-765-398-11	WIRE, PARALLEL (FFC) (25 CORE)	
⚠357	8-848-137-11	DEVICE, OPTICAL KSS-210B	
405	1-559-620-11	CORD (WITH CONNECTOR)	
ANT1	1-501-383-21	ANTENNA, TELESCOPIC	
⚠F901	1-532-745-11	FUSE (3.15A/125V)	
HE601	1-543-525-11	HEAD, MAGNETIC (ERASE)	
HRP601	1-543-714-11	HEAD, MAGNETIC (REC/PB)	
M401	A-3300-335-A	PRESS FITTING ASSY, MOTOR (A)	
M402	A-3300-337-A	PRESS FITTING ASSY, MOTOR (B)	
M601	X-4919-956-1	MOTOR ASSY	
PM401	1-409-541-11	COIL, PG	
S404	1-571-300-31	SWITCH, ROTARY (TRAY OPEN/CLOSE)	
S405	1-571-300-31	SWITCH, ROTARY (OPTICAL PIC-UP UP/DOWN)	
SP901	1-504-537-11	SPEAKER (10CM)	
SP902	1-529-058-11	BUZZER	
SP903	1-504-537-11	SPEAKER (10CM)	
SP904	1-529-058-11	BUZZER	
⚠T901	1-423-959-11	TRANSFORMER, POWER	

****

****
HARDWARE LIST
****

#1	7-621-255-15	SCREW +P 2X3
#2	7-621-255-25	SCREW
#3	7-621-255-35	SCREW
#4	7-621-255-45	SCREW
#5	7-621-255-55	SCREW
#6	7-621-770-87	SCREW +PTT 2.6X5 (S)
#7	7-621-775-20	SCREW +B 2.6X5
#8	7-624-118-01	RING, RETAINING E-2.5
#9	7-627-554-18	SCREW (M2X3.5), CAMERA
#10	7-628-253-95	SCREW +PS 2.6X4
#11	7-682-549-04	SCREW +B 3X10
#12	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2
#13	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
#14	7-685-548-19	SCREW +BTP 3X12 TYPE2 N-S
#15	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3
#16	7-685-647-79	SCREW +BVTP 3X10 TYPE2 SLIT
#17	7-685-648-79	SCREW, TAPPING +BV 3X12
#18	7-624-118-01	RING, RETAINING E-2.5

****

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		******************************	
	1-467-563-11	COMMANDER, STANDARD (RMT-C610)	
⚠	1-696-064-21	CORD, POWER (POLARIZED)	
	3-758-327-21	MANUAL, INSTRUCTION (ENGLISH)	
*	3-911-483-01	CUSHION (TOP)	
*	3-911-485-01	CUSHION (BOTTOM)	
*	3-911-486-01	INDIVIDUAL CARTON	
*	3-915-072-01	CUSHION (SP) (TOP)	
*	3-915-073-01	CUSHION (SP) (BOTTOM)	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

9-959-431-11

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General Audio Group

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CFD-600

SONY®
SERVICE MANUAL

US Model

SUPPLEMENT-1

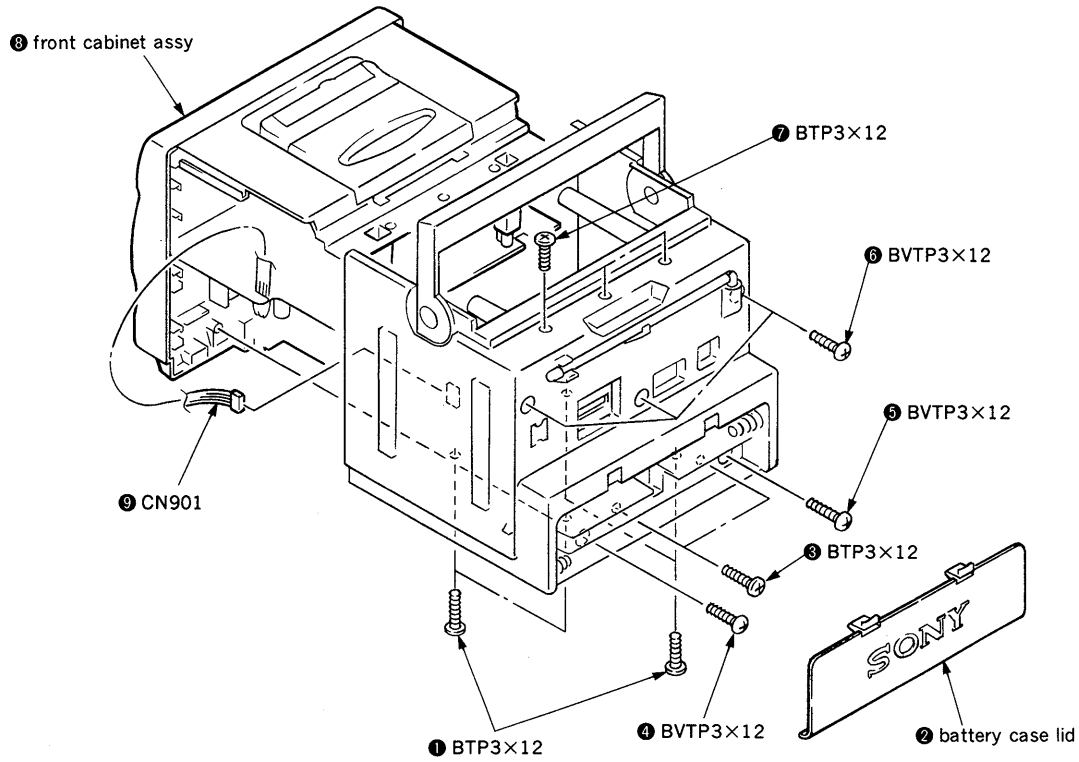
File this supplement with the service manual.

1. DISASSEMBLY
2. MECHANICAL ADJUSTMENTS
3. ELECTRICAL ADJUSTMENTS
4. DIAGRAMS
   (CIRCUIT BOARDS LOCATION)
   (BLOCK DIAGRAM)

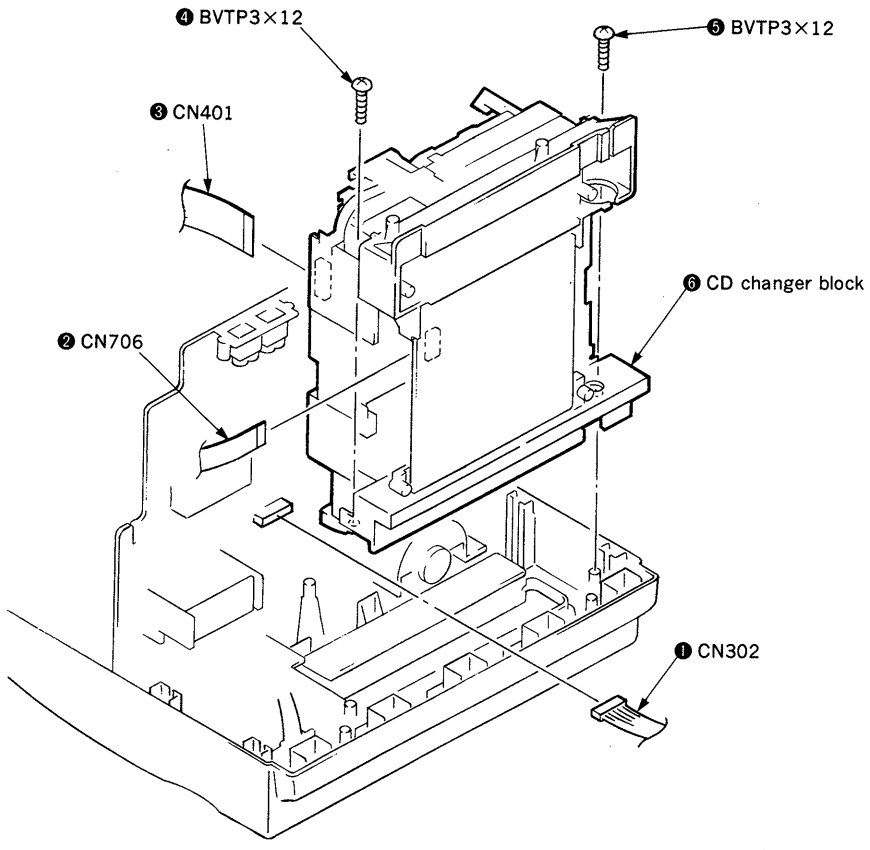
1. DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

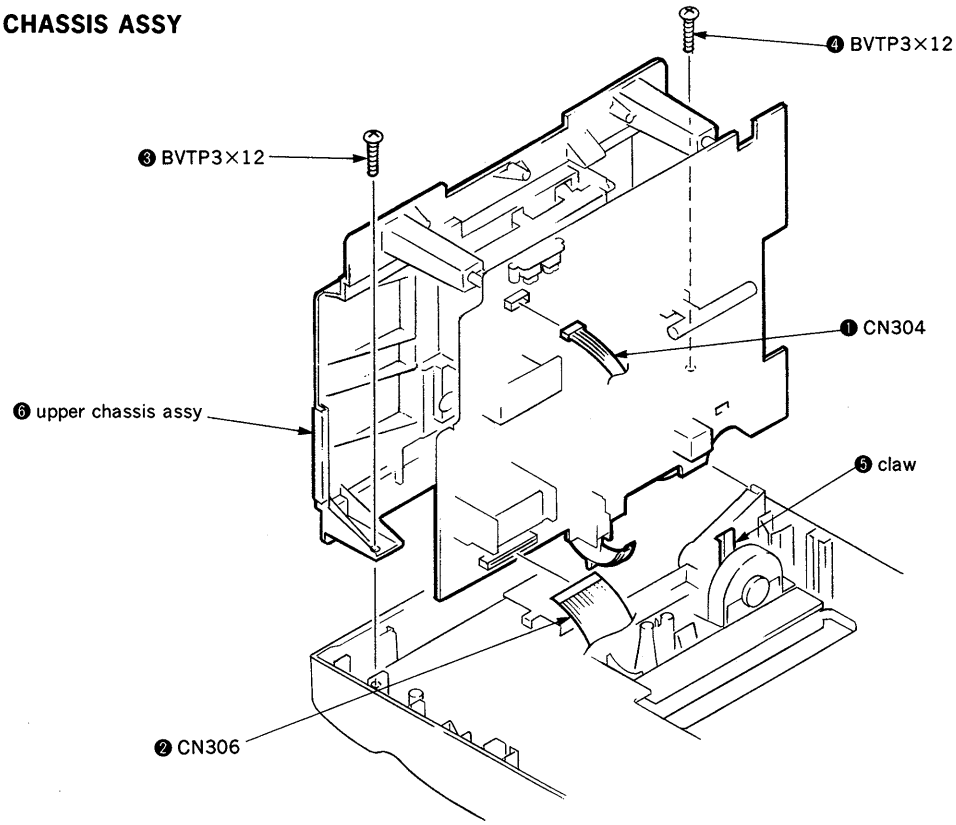
1. FRONT CABINET ASSY



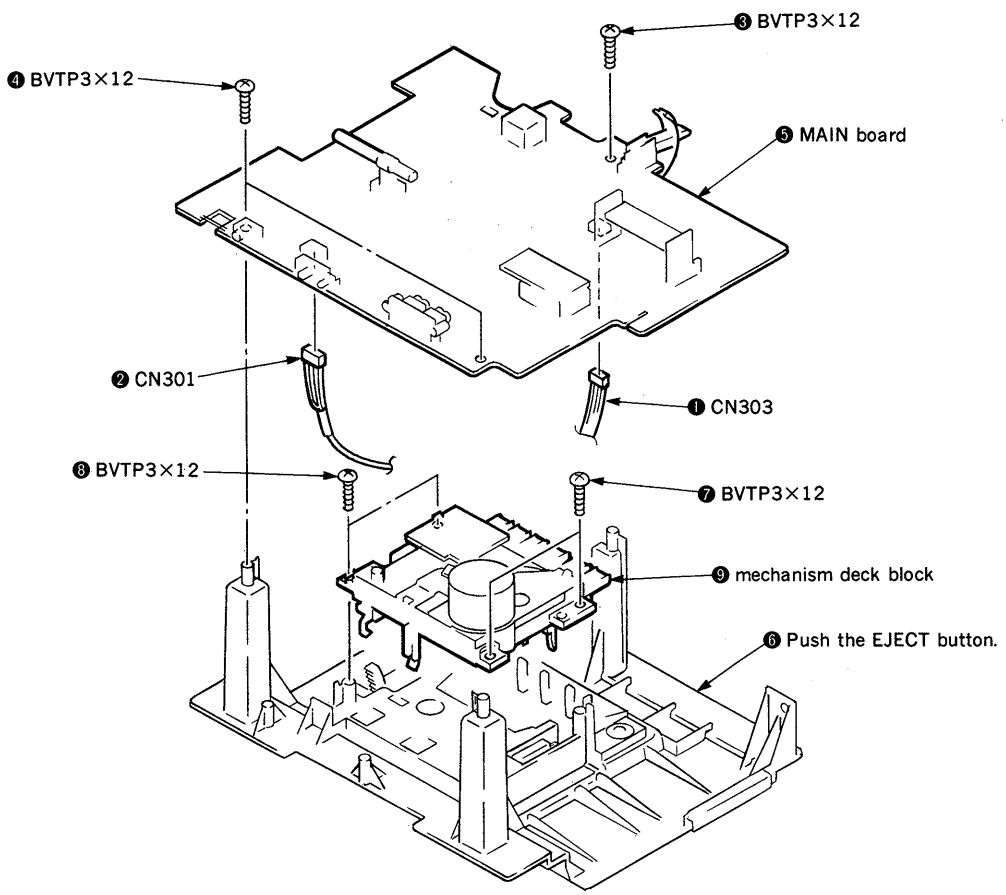
2. CD CHANGER BLOCK



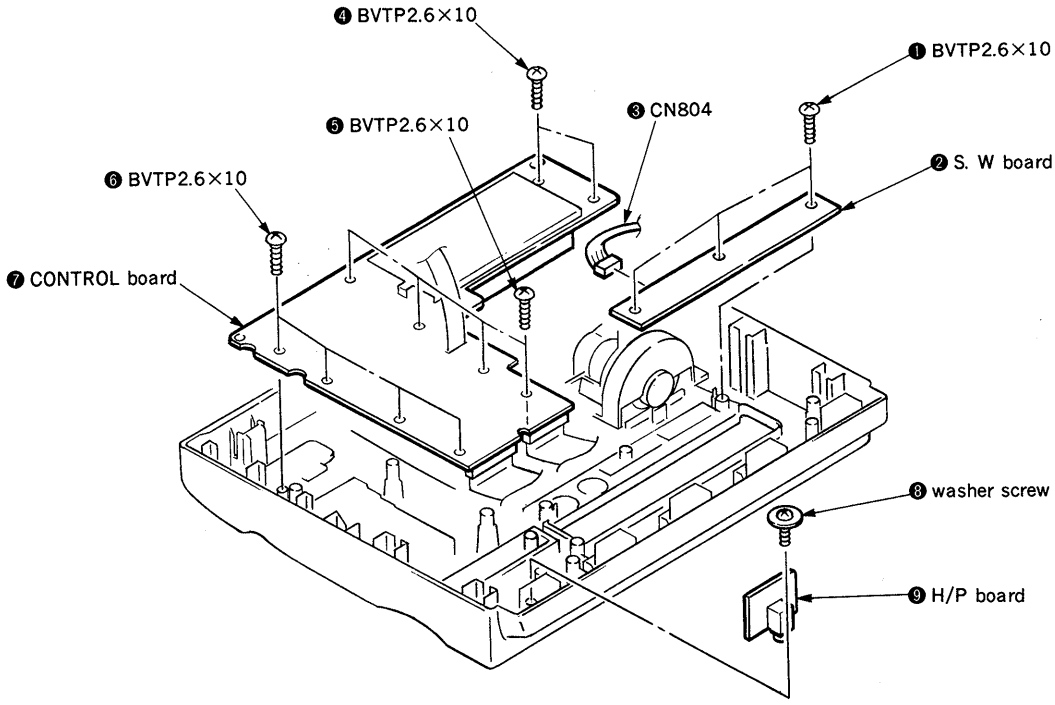
3. UPPER CHASSIS ASSY



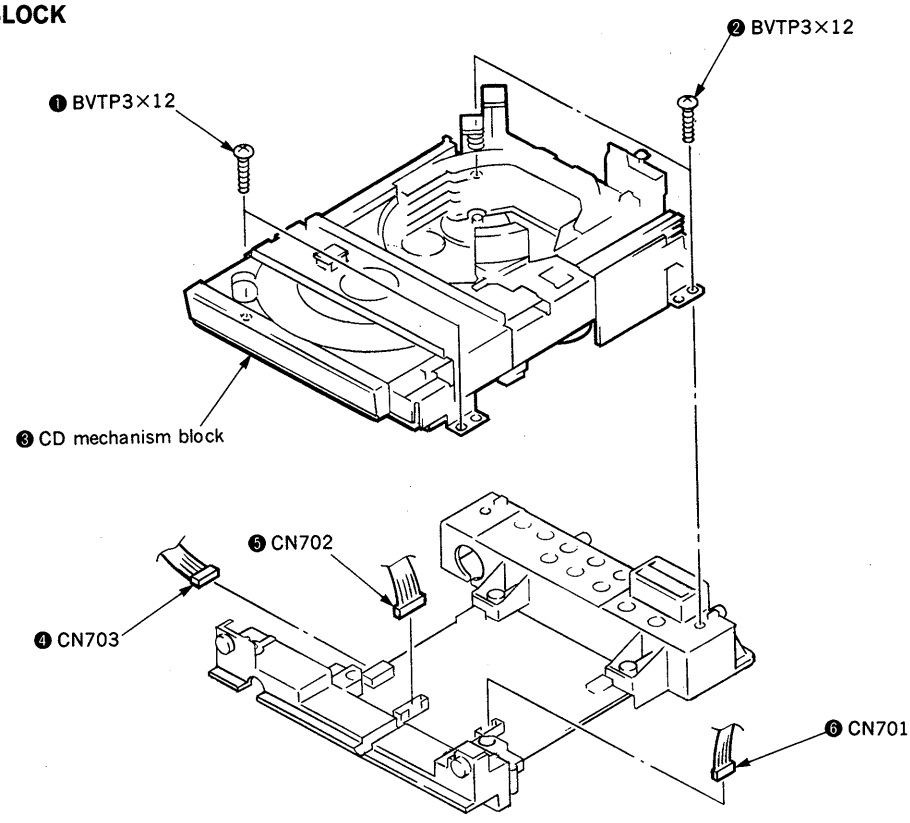
4. MECHANISM DECK BLOCK



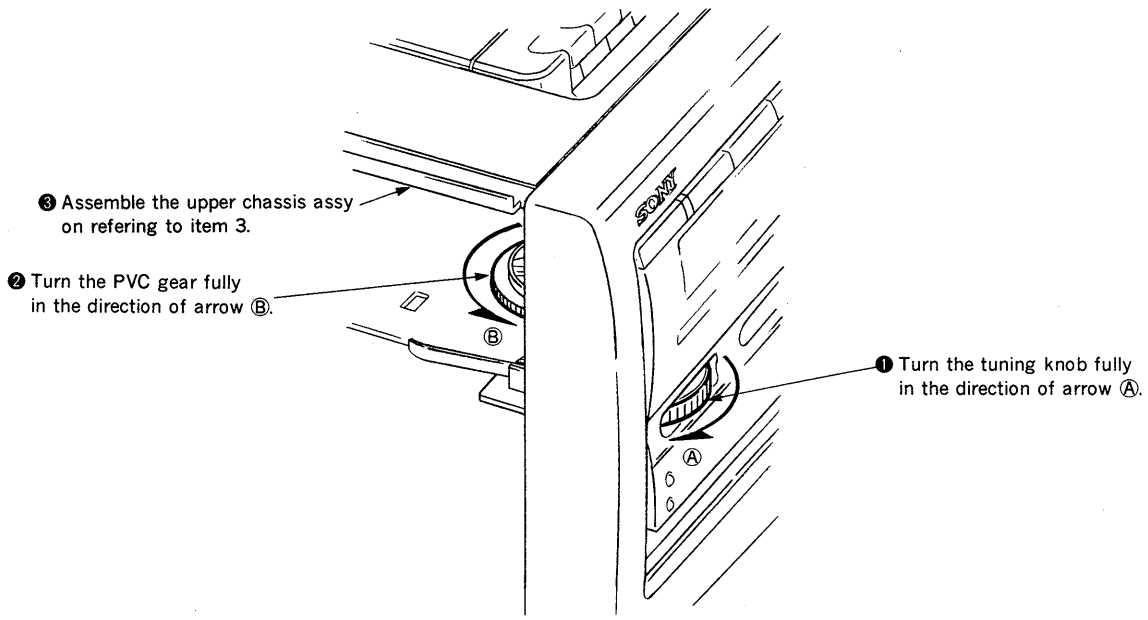
5. CONTROL BOARD



6. CD MECHANISM BLOCK



7. POINTER SETTING


❸ Assemble the upper chassis assy on refering to item 3.
❷ Turn the PVC gear fully in the direction of arrow Ⓑ.
❶ Turn the tuning knob fully in the direction of arrow Ⓐ.
SONY
Ⓑ
Ⓐ

2. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
6. Power supply voltage: 12V dc.

Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	22−55g•cm (0.31−0.76 oz•inch)
Forward back tension	CQ-102C	2−5g•cm (0.028−0.069 oz•inch)
Fast Forward	CQ-201B	more than 45g•cm (more than 0.62 oz•inch)
Rewind	CQ-201B	more than 45g•cm (more than 0.62 oz•inch)

Tape Tension Measurement

Mode	Meter	Meter Reading
Forward	CQ-403A	more than 100g (more than 1.39 oz)

3. ELECTRICAL ADJUSTMENTS

1. TAPE RECORDER SECTION

Standard Output Level

Output terminal	SP OUT	HP OUT
load impedance	4Ω	32Ω
output signal level	0.775V (0dB)	0.25V (−10dB)

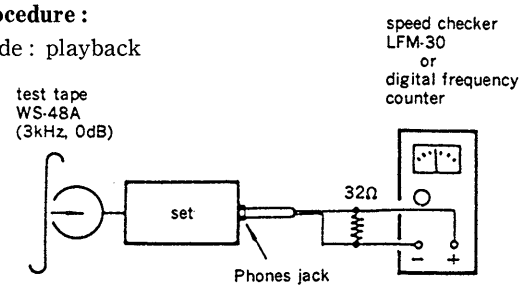
Test Tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment

Tape Speed Adjustment

Procedure:

Mode: playback

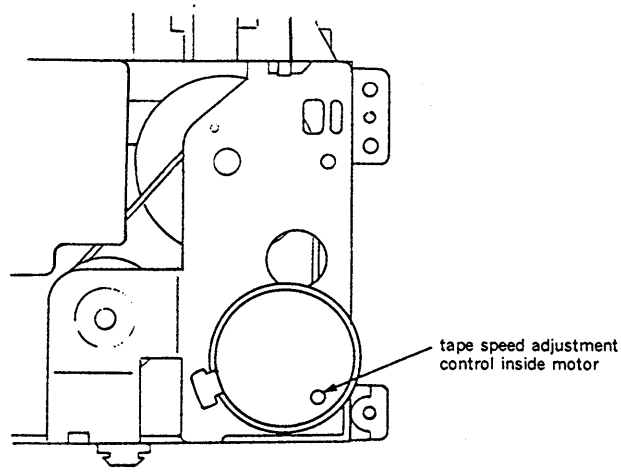


Adjustment Value:

Speed checker	Digital frequency counter
−1.3% to +0%	2,960 to 3,000Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45Hz).

Adjustment Location:

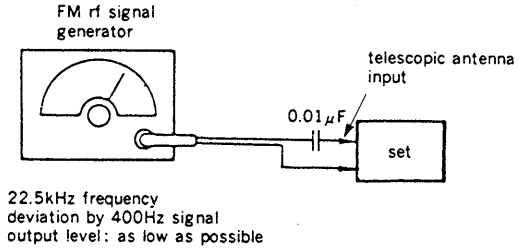


2. TUNER SECTION

• FM Section

Setting :

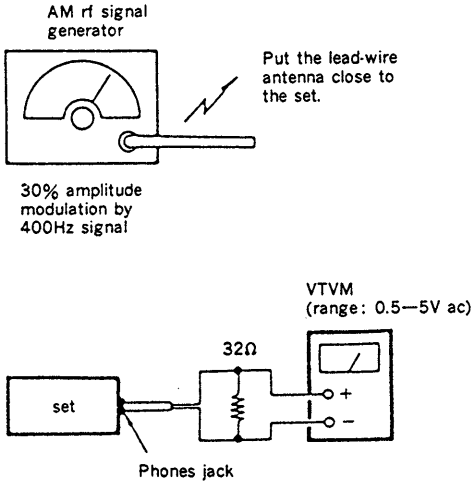
BAND switch : FM


FM rf signal generator
telescopic antenna input
0.01μF
set
22.5kHz frequency deviation by 400Hz signal output level: as low as possible

• AM Section

Setting :

BAND switch : AM



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.
- Remove telescopic antenna in FM section adjustments.

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	CT2
86.5MHz	109.5MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	CT1
86.5MHz	109.5MHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	CT4
520kHz	1,780kHz

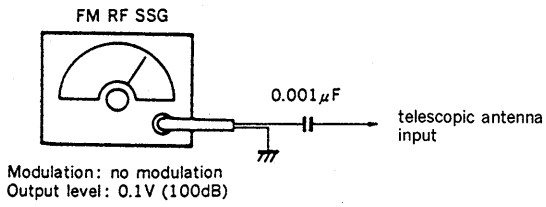
AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	CT3
620kHz	1,400kHz

AM IF ADJUSTMENT
Adjust for a maximum reading on VTVM.
CP1
455kHz

Adjustment Location : See page 8.

FM VCO Adjustment

Setting :



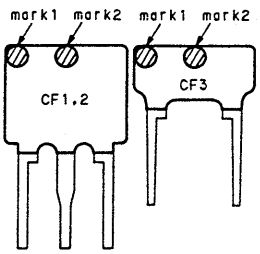
Procedure :

1. Adjust RV1 so that the reading on the frequency counter becomes in 76.0kHz ±0.5kHz.

Adjustment Location : main board

How To Changed The Ceramic Filters

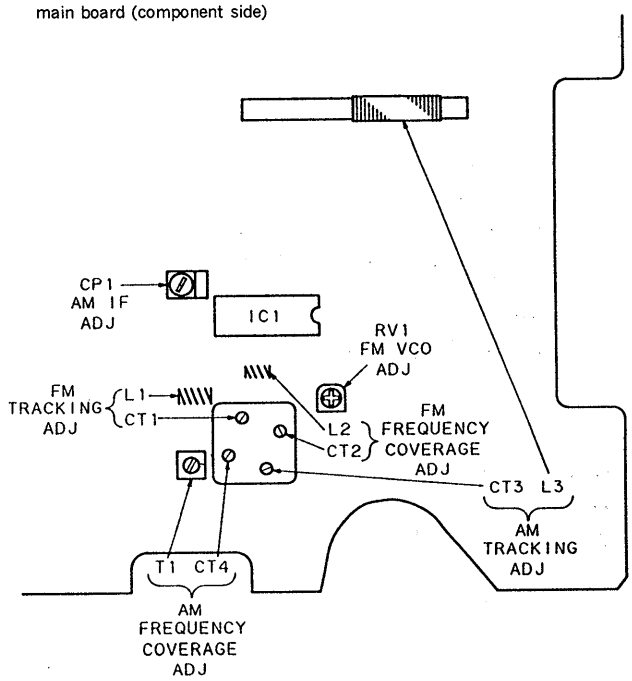
This model is used three ceramic filters of CF1-3.
You must used same type of color marked ceramic filters in order to meet same specifications.
Therefore, the ceramic filter must changed three pieces together since it's supply three pieces in one package as a spare parts.



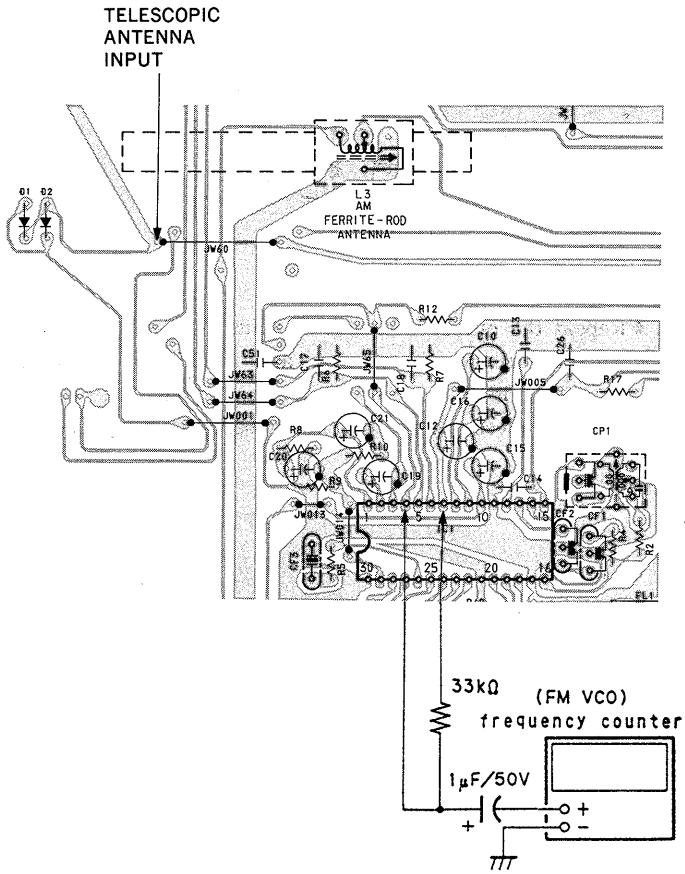
mark1	mark2	Center Frequency
red	—	10.70MHz
blue	—	10.67MHz
orange	—	10.73MHz
black	—	10.64MHz
white	—	10.76MHz
white	white	10.75MHz
yellow	—	10.79MHz

Adjustment Location : main board

main board (component side)



main board (conductor side)



3. CD SECTION

Notes on Adjustment

1. Perform Traverse adjustment in test mode.
   After adjustment, be sure to release test mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18, Part No. 3-702-101-01) only when so indicated.
4. Short the both sides of C735 for stop operation of anti-shock circuit.

• Switch position
Function·····CD

Before Adjustment

Put the set into test mode and perform the following checks. Repair if there are any problems.

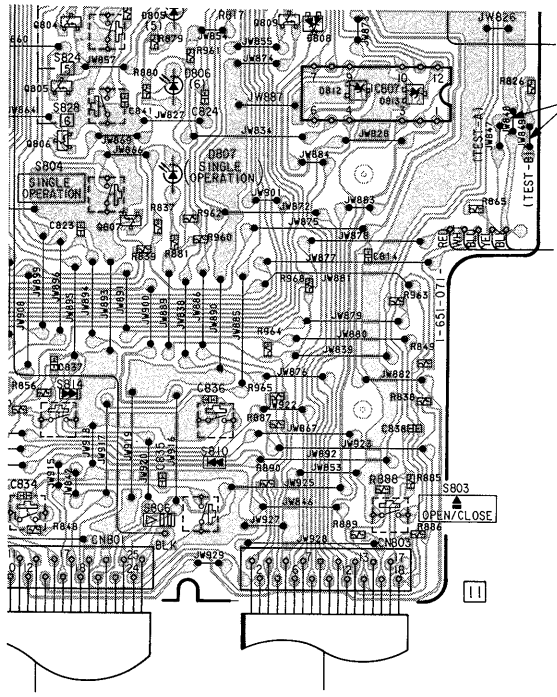
• In case of Test Mode

1. Push ON the POWER button.
2. While press the RESET button (S302) on the MAIN board, short between the JW848 and JW849 on the CONTROL board.
3. First, release the RESET button and next release the shorted jumper wires.
4. Push ON the POWER button once more.
5. Then the display indicates repeat five patterns, the test mode is set.

• Release the Test Mode

Push OFF the POWER button, the test mode is release.

control board (conductor side)



• Sled Motor Check

Press the ▶▶|, |◀◀ buttons and confirm that the FOP moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises.

▶▶| : FOP moves to the outer circumference
|◀◀ : FOP moves to the inner circumference

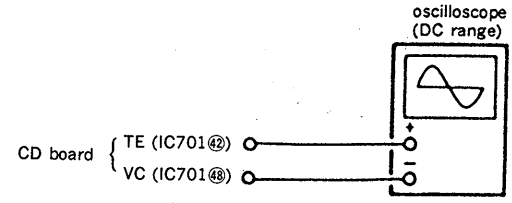
• Focus Search Check

1. Push the ▷ ▯▯ button. (Focus search operation is performed continuously.)
2. Look at the FOP objective lens and confirm the it moves up and down smoothly, with no catching or abnormal noises.
3. Push the ■ button.
   Confirm that focus search operation stops. If it does not, push the ■ button again longer.

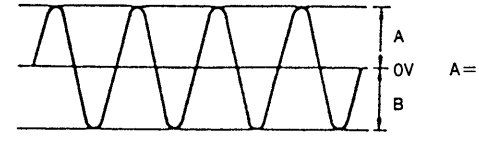
Traverse Adjustment

This adjustment is to be done when the optical pick-up block is replaced.

Procedure :



1. Connect the oscilloscope between TE and VC.
2. Put the set into test mode.
3. Push the ⏏ button to open the tray and insert disc (YEDS-18).
4. Push the ⏏ button once more to close the tray.
5. Press the ▶▶| and |◀◀ buttons to move the FOP to the center.
6. Push the ▷ ▯▯ button. (Display indication : [d 01)
7. Push the ■ button. (Display indication : Repeat five patterns)
8. Push the ▷ ▯▯ button. (Display indication : [d 01)
9. Adjust RV703 so that the oscilloscope traverse waveform is symmetrical, as shown in the figure below.
10. Release test mode after adjustment is completed.

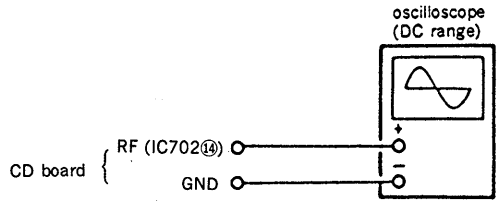


Adjustment Location : See page 12.

Focus Bias Adjustment

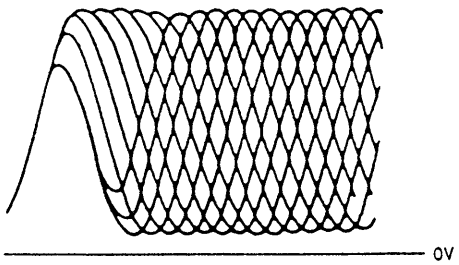
This adjustment is to be done when the optical pick-up block is replaced.

Procedure :



1. Connect the oscilloscope between RF and GND.
2. Insert disc (YEDS-18) and push the ▷ ▯▯ button.
3. Adjust RV701 so that the oscilloscope waveform is maximum as shown in the figure below (eye pattern).

- RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Adjustment Location : See page 12.

REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When gain adjustment is off, the symptoms below appear.

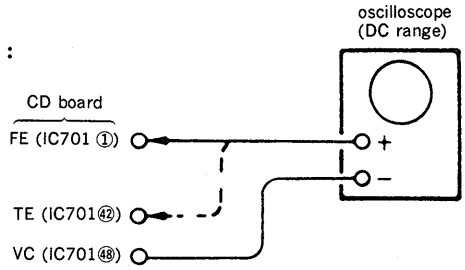
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for ■ →▷ ▯▯ on automatic selection. (⏮ , ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
• Music docs not start and disc continues to rotate for ■ → ▷ ▯▯ or automatic selection. (⏮, ⏭ buttons pressed.)	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
• More poise during 2-axis device operation.	high	high

The following is a simple adjustment method.

—Simple Adjustment—

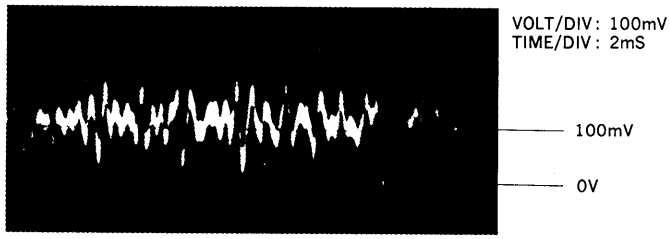
Note : Since exact adjustmeunt cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure :



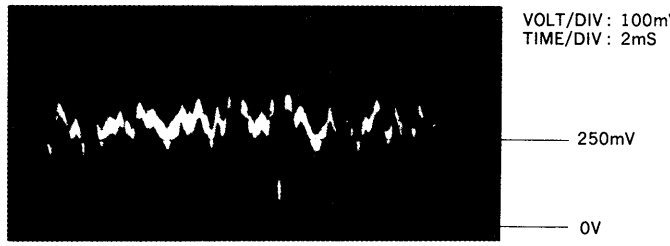
1. Keep the set horizontal.
   If the set not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert disc (YEDS-18) and push the ▷ ▯▯ button.
3. Connect oscilloscope to FE on the CD board.
4. Adjustment RV702 so that the waveform is as shown in the figure below. (focus gain adjustment)

• Correct Example

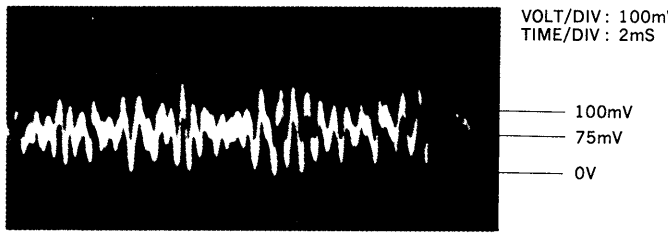


• Incorrect Examples (DC level changes more than on adjusted waveform)

low focus gain



high focus gain

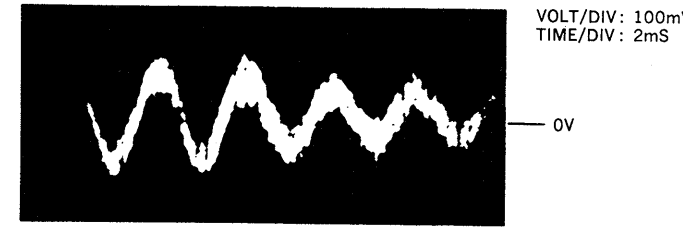


5. Connect oscilloscope to TE on the CD board.
6. Adjust RV704 so that the waveform is as shown in the figure below. (tracking gain adjustment)

• Correct Example

• Incorrect Examples (fundamental wave appears)

low tracking gain

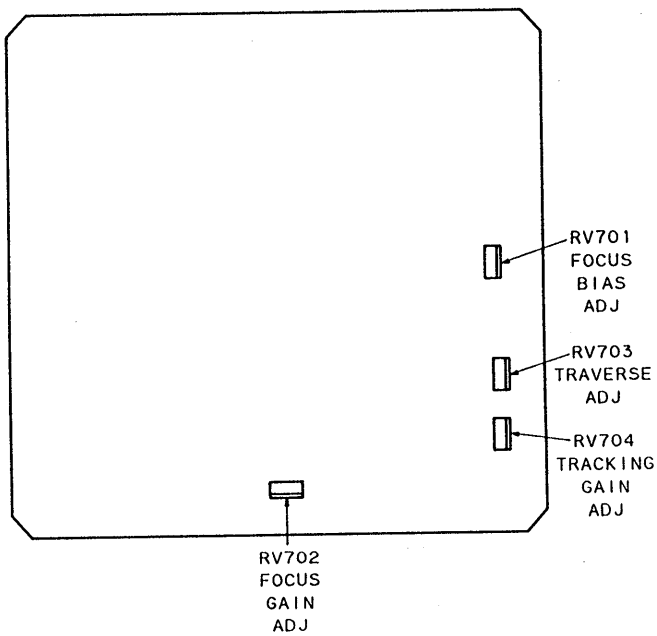


high tracking gain
(higher fundamental wave than for low gain)

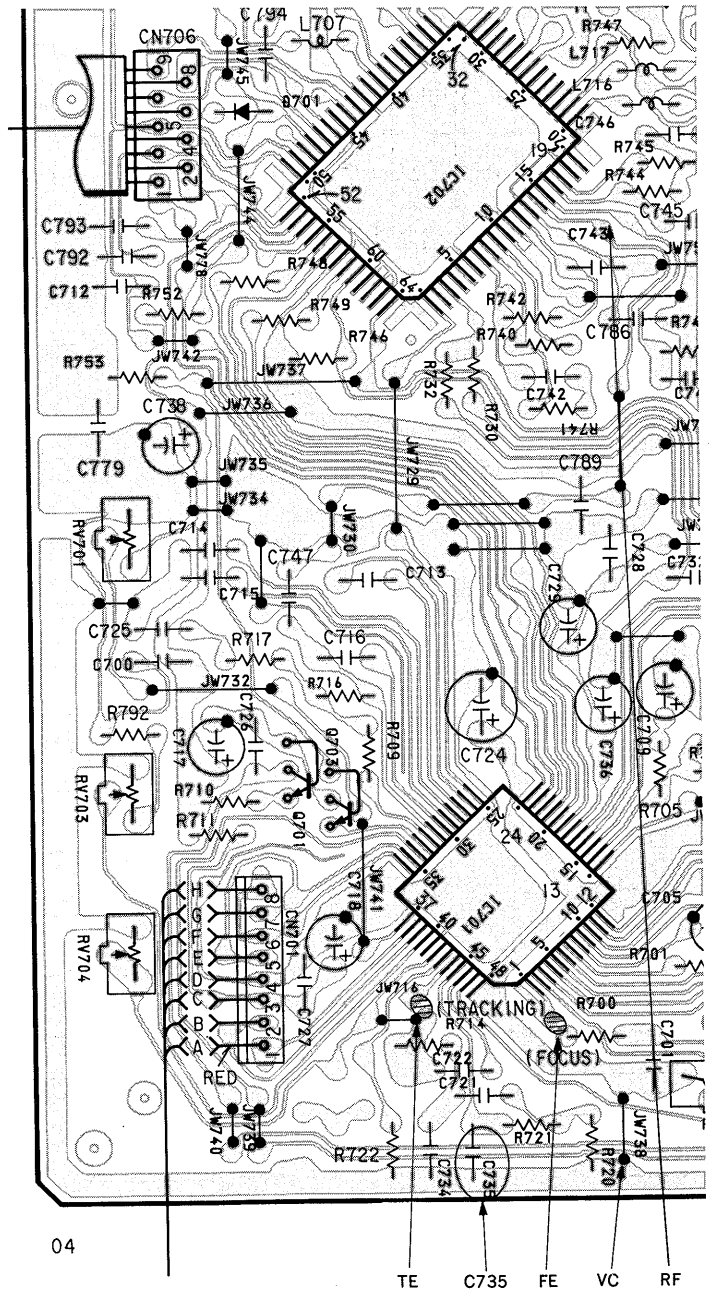
Adjustment Location : See page 12.

Adjustment Location : CD board

CD board (component side)

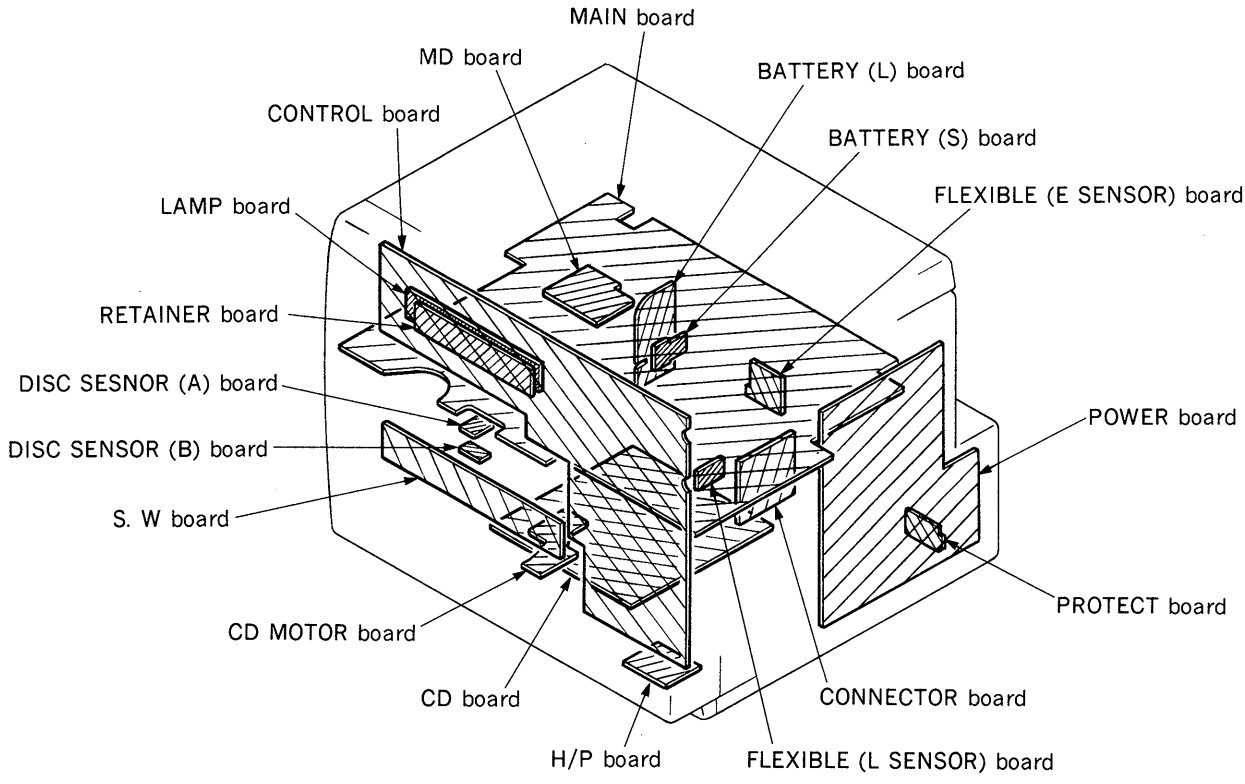


CD board (conductor side)

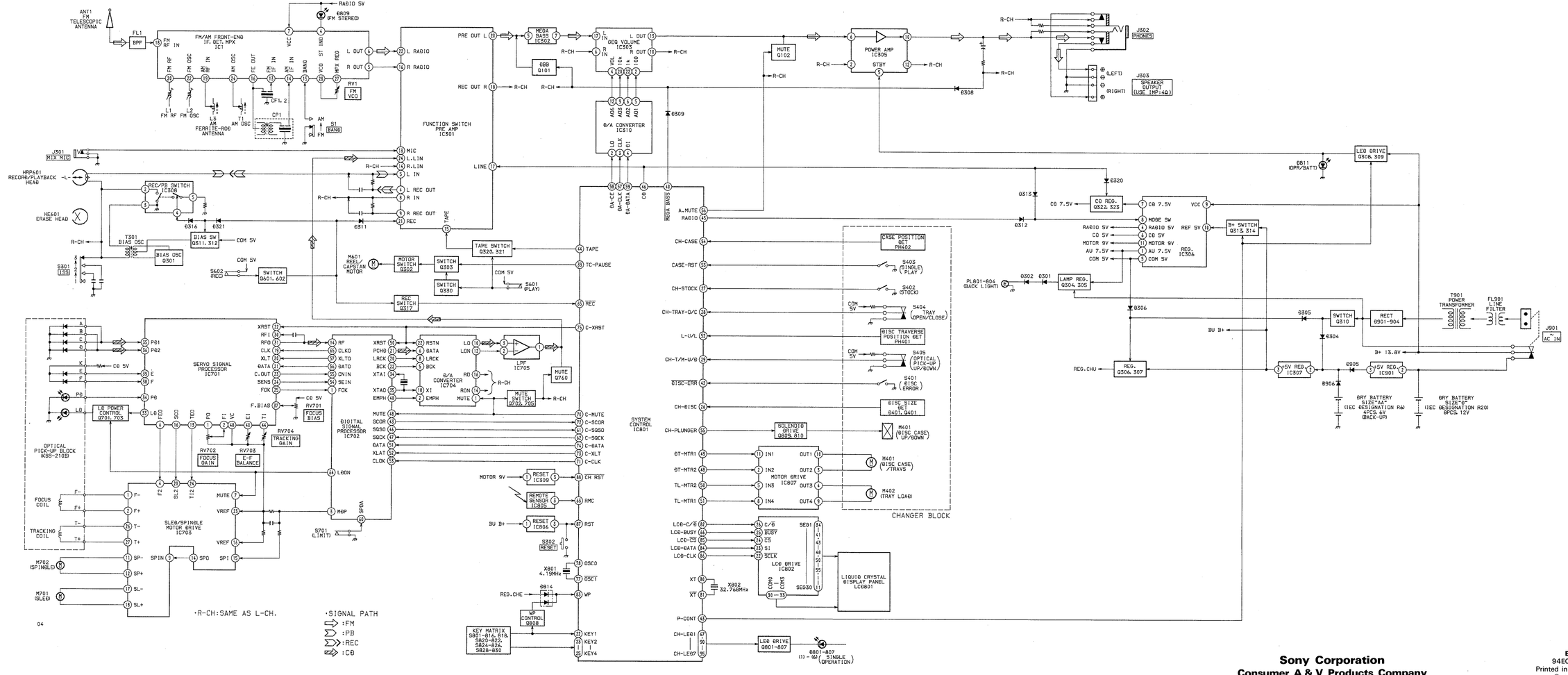


4. DIAGRAMS

1. CIRCUIT BOARDS LOCATION



2. BLOCK DIAGRAM



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